

Summary of the Status of Commercially Harvested Fish Stocks in Lake Huron in 2007

(Including recommended quota
adjustments for 2008)

Upper Great Lakes Management Unit
Lake Huron
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Natural Resources
Ministère des
Richesses naturelles



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Harvested Fish Stocks in Lake Huron in 2007
(Including recommended quota adjustments for 2008)

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Upper Great Lakes Management Unit,
Lake Huron Office

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Introduction

Assessment of the commercially targeted fish stocks in Lake Huron is one of the core programs of the Upper Great Lakes Management Unit (UGLMU), Lake Huron office. The commercial fishery exists throughout most of the waters of Lake Huron and involves both small and large fisheries targeting species such as lake whitefish, walleye, and yellow perch. Both Ontario licensed commercial fisheries and Aboriginal commercial and subsistence fisheries exist in Lake Huron, adding to the complexity of the fishery.

Over the past several years, new methods of assessing commercially harvested fish stocks in Lake Huron have been implemented. These methods continue to be developed and refined on an on-going basis. This Status of Stocks Report has been developed as part of the process of reporting the status of commercial stocks in Lake Huron. Its purpose is two fold: first it is intended to briefly summarize the methodologies and analyses that have been conducted on the data collected from these stocks and second, it will include preliminary recommendations for any changes to existing commercial fishery quotas based on interpretation of the available biological data. It should be noted that these recommendations are preliminary and may not reflect the final adjustments implemented by lake management staff.

Methods

The complete analysis and summary of commercial fishery data is based upon three major assessment programs run by the UGLMU: the Commercial Harvest Reporting program, the Commercial Catch Sampling program and the Offshore Index Assessment program. The status of each of these programs

is generally reported independently, on an annual basis. In addition, external data are included in some of the analyses described in this report. These include data from the Saugeen Ojibway Assessment program and the Anishinabek/Ontario Fisheries Resource Centre (AOFRC). Results from joint assessments with U.S. partners may also be included in certain sections. Any external data used in this report is referenced in the appropriate section.

The metrics used to assess the fish stocks for each species in each Quota Management Area (QMA) are largely determined by the type and amount of data available (Mohr et al. 1997). At a minimum, trends in reported harvest, catch-per-unit-effort (CPUE), and percent quota harvested are considered as indicators of stock status. In some QMAs with small fisheries, or species that are infrequently targeted, these may be the only metrics available for stock evaluation.

In addition to these core metrics, biological data are normally available for the most frequently harvested species through the UGLMU's onboard catch sampling program. The biological data from this program provide information on the size and age composition of the catch, as well as information about sex and maturity, lamprey wounding, and species composition. Collectively, this information can be used to gain insights into the dynamics of the populations (e.g. identify strong and weak year classes, changes in growth or maturity), allow for estimation of population abundance and biomass, and help to document changes in the populations that may have ramifications for the commercial fishery or the lake ecosystem as a whole.

On board catch sampling data is also used to monitor the age composition of the catch, including the mean age and number of age classes. Generally, populations with more age classes are more resilient than those with only a

few exceptionally strong cohorts. The importance of maintaining a broad age distribution in exploited fish stocks has become increasingly apparent in recent years (Berkeley et al. 2004; Francis et al. 2007). Age composition data are used in a number of ways. When several years worth of catch sampling data are summarized in catch-at-age tables (e.g. see Appendix B), the age structure of the population through time becomes immediately apparent. Additionally, catch curve analysis (Ricker 1975) is used to estimate total annual mortality for each year for each species and QMA based on the observed age composition.

Where sufficient data exist, age structured models are used to provide additional insights into the status of specific species and populations around the lake. Both cohort analysis (Pope, 1972) and statistical catch at age models (SCAA; Ebener et al. 2005) are used, depending on the species and QMA. Due to the data intensive nature of these models, they are generally only available for the largest fisheries on the lake. Cohort and SCAA models provide estimates of total mortality, fishing mortality by gear, biomass by age through time, as well as a number of other population parameters. Additionally, the age-structured models are projected one year into the future to ensure that current exploitation levels are sustainable.

The UGLMU also conducts a fishery independent offshore index assessment program that provides information that cannot be readily obtained through sampling the commercial catch (UGLMU 2007). One of the most important roles of the program is to provide insights into the strength of year classes before they recruit to the commercial fishery. For selected species, a pre-recruit index (PRI) is calculated to express relative year class strength. The PRI is the mean CPUE for each species in index nets for two to four years prior to their recruitment to commercial gear, standardized to a base of 10. Strong year classes have a PRI that is greater than 10, while

weak year classes have a PRI that is less than 10. In addition to the PRI, the offshore index program also provides important information about population dynamics for several stocks and an indication of the overall fish community structure in Lake Huron.

Additionally, where CPUE data from the independent index program is discussed, it is generally presented in the form of 'box-whisker' plots. Box-whisker plots are intended to illustrate the trend in catches through time. In these plots, each year is represented as a box on the horizontal axis. The bold line within each box represents the median CPUE value observed during that year, while the upper and lower limits of each box represent the 25th and 75 percentiles. Box-whisker plots are particularly well suited to illustrating the shape and range of the underlying data.

To facilitate the compilation and interpretation of the numerous metrics used in the stock status process, the UGLMU has developed a stock status evaluation protocol (SSEP) for lake whitefish (Table 1). An example of the application of this method can be found in Mohr and Ebener (2007). A SSEP table is completed for lake whitefish in each QMA, and provides a relatively simple, visual way to evaluate the current status of lake whitefish populations.

Finally, it is important to note that the amount of data available for analysis is critical in terms of managing risk associated with the commercial fisheries in Lake Huron. In the absence of data of one type or another, the only management option available to the UGLMU is to manage the commercial fishery in a conservative manner. As more (and in most cases, better) data is made available, it increases the ability of the UGLMU to assess the status of the stock and thereby manage the fishery with a higher degree of certainty.

Table 1. The Upper Great Lakes Management Units stock status evaluation protocol summary table for lake whitefish.

QMA:	Status of Stock				
Parameter	←← LOWER ←← HIGHER	Risk Health/Sustainability			HIGHER →→ LOWER →→
CPUE Commercial Harvest	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	≥0.6	≥0.7	≥0.8	≥0.9	≥1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
STATISTICAL CATCH AT AGE					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F:M	<0.5	<0.8	< 1.0	>1	>1.5
SPR	>.45	>.35	> .20	<.20	<.15
2007 - 3 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (>67% and <150%)	Lower than Average (>33% and <67%)	Very Low (<33%)
Ratio Harvest : Est. Exploitable Biomass 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

Lake Whitefish - Overall

Although lake whitefish continues to be the dominant commercial species on Lake Huron, the overall harvest of lake whitefish was down again in 2007 and is now the lowest value reported in the past 15 years. Most of this drop in harvest is associated with catch in the main basin, as the harvest from the North Channel and Georgian Bay has been relatively stable over the past decade. Within the main basin, harvest in 2007 was noticeably lower in QMAs 4-4 and 4-5, although all of the individual QMAs showed some degree of reduced harvest. The reason for the decline in harvest in the central and southern main basin is not entirely clear, but may be a function of the current economic conditions.

On a lake wide basis, gill net CPUE for lake whitefish was down in all three basins in 2007, and is currently among the lowest CPUE reported over the past 15 to 20 years. Like the decline in harvest, the decline in CPUE appears to be wide spread, rather than attributable to a few isolated areas. In the main basin, with the exception of QMAs 4-1 and 4-2 which were low but stable, all of the QMAs had slightly lower mean CPUE values than 2006. The reported CPUE for QMA 4-4, 4-5 and 4-7 were all noticeably lower than their peak values from the lake 1990s. Similarly, the reported CPUE from all QMAs in both Georgian Bay and the North Channel were also lower in 2007 than in 2006. The only exception was QMA 5-8 which was higher in 2007 than the previous year, but the CPUE reported for this QMA has been highly irregular over the past decade. Catchability issues associated with the increased prevalence of filamentous algae in many parts of Lake Huron may be partially responsible for the lake wide reduction in lake whitefish CPUE, although a broad scale reduction in lake whitefish abundance cannot be ruled out.

The age distribution of lake whitefish in the catch of the commercial fishery continues to change through out the lake. Generally, harvested lake whitefish are getting older. In the past, the harvest in most QMAs was composed of four, five and six year old fish, while the harvest today is more frequently comprised of seven to ten year old fish with few younger age classes. The offshore index and commercial catch data suggest that recent year

classes are present in the main basin and North Channel. These new year classes are expected to recruit to the commercial fishery over the next couple of years. However, there is very little evidence of these same year classes in Georgian Bay. In fact, recruitment in Georgian Bay has been well below average since 1999, the year of the last strong year class. The apparent absence of recruitment in Georgian Bay lake whitefish populations continues to be a very real concern.

Lake Whitefish QMA 4-1

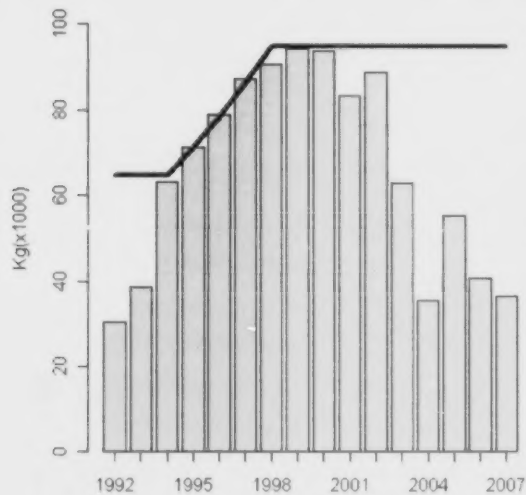


Figure 1. Lake whitefish quota (line) and harvest (bars) from management area 4-1.

Harvest from QMA 4-1 declined again in 2007 with only 38% of the quota harvested (Fig. 1). Total effort in this QMA also declined slightly (10%) suggesting the decline in harvest may not directly reflect changing fish abundance. CPUE from the commercial data decreased slightly in 2007 but has been relatively stable over the past five years (Fig. 2).

No sampling of the commercial fishery occurred in this zone in 2007, due in part to the minimal amount of fishing that actually took place. For the purposes of further analyses, it was assumed that the age and size distribution of the lake whitefish harvested in 2007 was similar to that observed in the 2005 and 2006.

Total annual mortality (A) estimated from cohort analysis was 53.3% in 2007, for gill net and trap nets combined. This is up from 2006 but still below the suggested upper ceiling used by UGLMU for exploited lake whitefish stocks.

Exploitable biomass estimates (Cohort analysis) show a declining trend over the past three years. This is similar to trends seen in the combined (QMAs 4-1, 4-2, and 4-3) SCAA model estimates

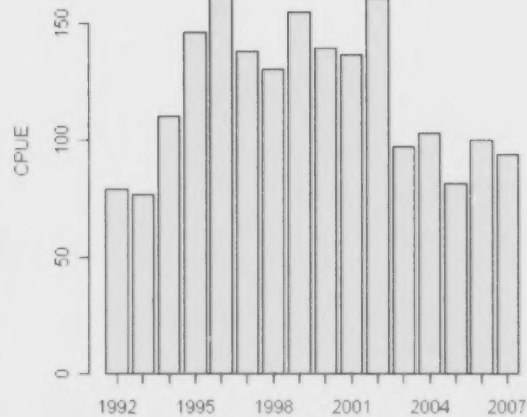


Figure 2. Lake whitefish gill net CPUE (kg/km) for management area 4-1.

where exploitable biomass has declined by 45% since 2003.

Summary and Recommendation

Information is limited due to decreasing commercial fishing effort and little recent commercial catch sampling. The underachievement of quota for the past four years is unusual. Discussions with commercial fishermen suggest that 1) high incidental lake trout catches, 2) changing water quality (filamentous algae clogging nets), and 3) the expense of travel to this relatively remote QMA are the reasons for the declining harvest and effort. Basic data (CPUE) suggest abundance is unchanged over the past five years, but still well below the values seen in the 1990s. Model output suggests declining biomass in this QMA and in the northern Main basin in general. However, low harvests in QMA 4-1 are still within limits used by UGLMU. More sampling is required in order to get a better sense of the status of lake whitefish in this QMA.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 4-2

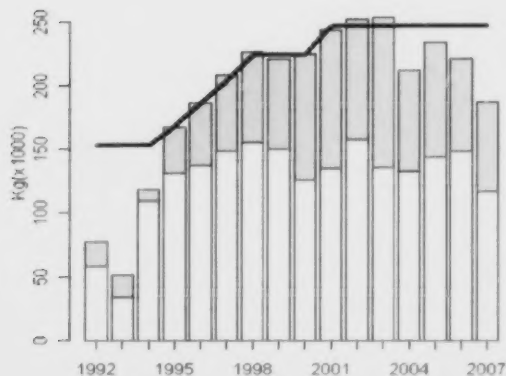


Figure 3. Lake whitefish quota (line) and harvest (bars) from management area 4-2.

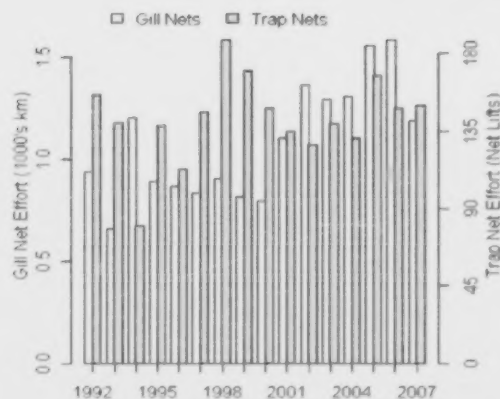


Figure 4. Lake whitefish targeted effort by gear for management area 4-2.



Figure 5. Lake whitefish CPUE by gear for management area 4-2.

Commercial harvest in QMA 4-2 declined, for the second year in a row, in 2007 (Fig. 3). The gill net fishery decreased 21.5%, while the trap net harvest decreased only 3.0%. The trap net harvest comprised 38% of the total harvest in 2007. Gill net effort declined from 2006 while trap net effort remained relatively unchanged (Fig. 4). CPUE for both gear types continues to be relatively low. Trap net CPUE has declined annually for four years while gill net CPUE increased marginally for the first time since 1999 (Fig. 5). This would suggest that while abundance appears to be low relative to the late 1990s, there was little change from 2006 to 2007.

Catch at age tables generated for this QMA continue to show a trend towards older fish and fewer age groups in the harvest, especially in the

SCAA Model Summary Lake Whitefish QMA 4-2

Data:	1978-2007	Ages:	3-10
Gear:	Gill nets and trap nets		
Age at First Spawning	5 years		
Age at 50% maturity	7 years		
Spawning biomass per recruit			
Base SSBR	0.632 kg		
Current SSBR	0.460 kg		
Spawning potential reduction	0.728		
Average yield per recruit	0.129 kg		
Natural Mortality	0.367		
Fishing Mortality (2005-2007)			
Gill net, average 6+	0.150		
Trap net, average 4+	0.054		
Sea lamprey mortality (2005-2007)			
Average 6+,	0.029		
Total mortality (Z)			
Average 6+ (2005-2007)	0.620		
Average 6+ (2007)	0.619		
Estimated Biomass (age 6+)			
Average (2005-2007)	1 556 191 kg		
Estimated Spawning biomass			
Average (2005-2007)	1 480 366 kg		
Quota (2007)	246 667 kg		

trap net fishery. In 2007, the mean age of the catch from gill nets was 8.0 with seven and eight year olds being the dominant age classes. In the trap net fishery, the mean age of the catch was 7.8, again with seven and eight year olds being dominant. No fish under age five were seen in the trap net catch, suggesting weaker recent year classes. While age of the catch has been increasing, there has been no change in growth of whitefish (size at age) in this QMA in recent years.

Total annual mortality (A) derived from cohort analysis (gill net and trap net combined) was 62.8% in 2007; up from previous years and close to the UGLMU upper limit used for exploited lake whitefish stocks. SCAA analysis estimated total annual mortality to be 46% for age 6+ fish in 2007.

Despite declining estimates of exploitable biomass, the ratio of the harvest to the exploitable biomass is well below the 35% threshold utilized by the UGLMU. The spawning potential reduction (SPR) is also relatively high (72.8%) suggesting that current harvest levels are not adversely affecting the current spawning stock in this part of the lake.

Summary and Recommendation

While lake whitefish abundance has been declining over several years and exploitable biomass appears to have peaked in between 2002 and 2004. The population is currently comprised of older, larger fish with little evidence of subsequent recruitment. This needs to be monitored closely in the upcoming years.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 4-3

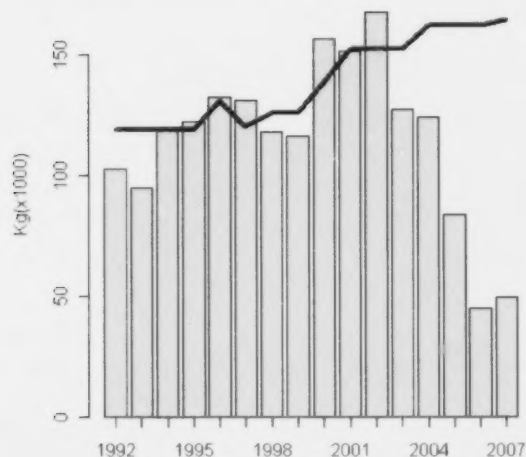


Figure 6. Lake whitefish quota (line) and harvest (bars) from management area 4-3.

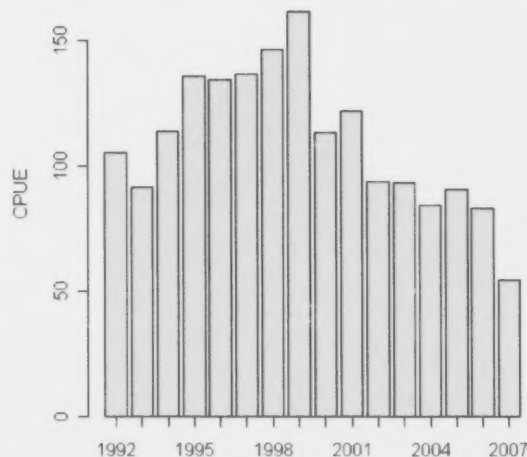


Figure 7. Lake whitefish gill net CPUE (kg/km) for management area 4-3.

Lake whitefish harvest remained low in this QMA in 2007 (49 605 kg), similar to the harvest seen in 2006 (Fig. 6). Only 30% of the fishing quota was harvested in 2007. There was a 40% increase in gill net fishing effort in this QMA in 2007. This resulted in a major decline in CPUE in 2007 to a level not seen for more than 20 years (Fig. 7). While several factors may be contributing to the changing fishing effort, it appears that fish abundance may also be declining.

Minimal (3 events) commercial catches were sampled in 2007 in this QMA. Mean age continues to be high (7.9 yr), relatively unchanged since 1998. Age seven and eight fish dominated the catch which only comprised six year classes this year.

Catch curve mortality was 58.4% in 2007 while the SCAA estimated total annual mortality was 43.8 % for age six and older fish. Both values are below the threshold used by the UGLMU for exploited whitefish populations.

Estimates of exploitable and spawning biomass of lake whitefish are still high relative to historic levels. However, both cohort analysis and SCAA models indicate that biomass declined in 2007. This is largely attributable to the absence of fish age five and younger in the catch.

SCAA Model Summary Lake Whitefish QMA 4-3

Data:	1978-2007	Ages:	3-10
Gear:	Gill nets only		
Maturity			
Age at First Spawning			3 years
Age at 50% maturity			5 years
Spawning Biomass per Recruit			
Base			0.745 kg
Current			0.564 kg
Spawning potential reduction		0.756	
Average yield per recruit			0.057 kg
Natural Mortality			0.358
Fishing mortality (2005-2007)			
Gill net, average 6+		0.103	
Sea Lamprey Mortality (2005-2007)			
Average 6+			0.116
Total Mortality			
Average 6+ (2005-2007)		0.577	
Average 6+ (2007)		0.551	
Estimated Biomass (age 6+)			
Average (2005-2007)			1 393 064 kg
Estimated Spawning biomass			
Average (2005-2007)			1 306 636 kg
Quota (2007)			164 346 kg

The spawning potential reduction (SPR) value of 76% suggests that the current level of harvest is not adversely affecting the spawning capacity of the lake whitefish in this QMA.

Summary and Recommendation

High exploitable biomass relative to low harvest levels currently present a very low risk to lake whitefish stocks in this QMA. Total annual mortality continues to be within the limit used by the UGLMU for exploited stocks. Low fishing effort and limited catch sampling opportunities reduces our ability to collect biological samples and evaluate sustainable fishing levels (quota).

Poor recruitment and an aging population is a concern throughout most of the northern Main basin. This should be monitored closely in the upcoming years.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 4-4

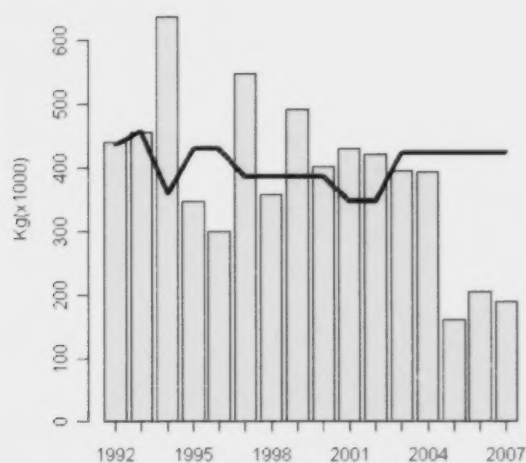


Figure 8. Lake whitefish quota (line) and harvest (bars) from management area 4-4.

Harvest of lake whitefish from QMA 4-4 declined in 2007 to 188 869 kg (Fig. 8). At the same time, targeted fishing effort increased slightly to 920 km of gill nets. CPUE decreased in 2007 but remains relatively unchanged over the past several years.

No age data was available for lake whitefish harvested from this QMA in 2007. For cohort analysis, average age proportions from 2005 and 2006 were used to generate catch at age data. For SCAA analysis, the age composition data was not included in the model input.

Total annual mortality (A) was estimated to be relatively low at 46.8% (cohort analysis). SCAA derived mortality was 37% combining data from both QMA 4-4 and 4-7. Total annual mortality is currently under the limit used by the UGLMU for exploited lake whitefish populations.

Exploitable biomass remains relatively high in recent years although a slight decline was estimated for 2007 using both models.

SPR is relatively high (72.6%) and the ratio of harvest to exploitable biomass from both age-structured models is less than 20% suggesting that current harvest levels are unlikely to adversely effect the spawning potential of lake whitefish in this QMA.

SCAA Model Summary Lake Whitefish QMAs 4-4 and 4-7

Data:	1978-2007	Ages:	3-10
Gear:	Gill nets only		
Maturity			
Age at First Spawning		6 years	
Age at 50% maturity		7 years	
Spawning Biomass per Recruit			
Base		0.818 kg	
Current		0.594 kg	
Spawning potential reduction	0.726		
Average yield per recruit	0.120 kg		
Natural Mortality	0.318		
Fishing Mortality (2005-2007)			
Gill net, average 6+	0.115		
Sea Lamprey Mortality (2005-2007)			
Average ages 4+	0.023		
Total Mortality			
Average 6+ (2005-2007)	0.462		
Average 6+ (2007)	0.437		
Estimated Biomass (Age 6+)			
Average (2005-2007)	3 817 015 kg		
Estimated Spawning biomass (Age 6+)			
Average (2005-2007)	3 422 839 kg		
Quota (2007)	4-4	424 368 kg	
	4-7	84 677 kg	

The independent offshore index netting program predicted a relatively strong year class in 2003. Unfortunately, this year class appears to have weakened in recent years. The contribution of this year class to the commercial fishery in this part of the lake is now uncertain. The 1999 year class was the last strong year class in this QMA and continues to support the fishery (at least up to 2006).

Summary and Recommendation

Based upon all available information, the lake whitefish population in QMA 4-4 appears to be healthy, with moderate mortality and sufficient biomass to support existing harvest levels. The apparently low proportion of the quota harvested in the last 3 years is an anomaly. Quota is currently not limiting the harvest in this QMA.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 4-5

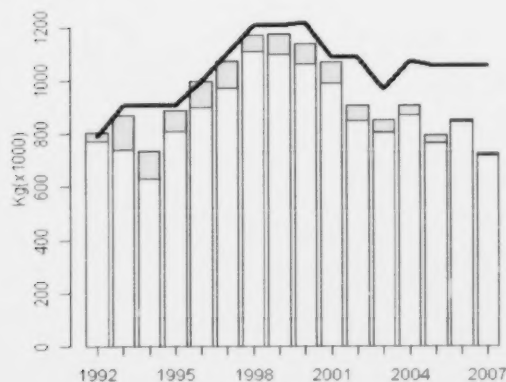


Figure 9. Lake whitefish quota (line) and harvest (bars) from management area 4-5



Figure 11. Lake whitefish CPUE by gear for management area 4-5

Harvest of lake whitefish from QMA 4-5 declined in 2007 (725 473 kg) to a level not seen since 1991 (Fig. 9). Only 69% of the quota was harvested in this QMA. Trap net effort and harvest increased slightly in 2007 but still only makes up just over 1% of the total harvest (Fig. 9 and 10). Gill net fishing effort increased in 2007 while harvest declined (Fig. 9 and 10).

CPUE for lake whitefish in both trap nets and gill nets was down in 2007 (Fig. 11), both are noticeably lower than during the periods of peak harvest in the late 1990s. The CPUE reported from the gill net fishery in 2007 was the lowest reported since the mid 1980's.

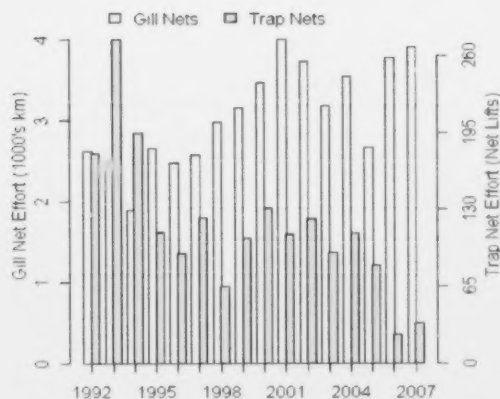


Figure 10. Lake whitefish targeted effort by gear for management area 4-5

SCAA Model Summary Lake Whitefish QMA 4-5

Data: 1978-2007 Ages: 3-10
Gear: Gill nets and trap nets

Age at First Spawning	5 years
Age at 50% Maturity	6 years
Spawning Biomass per Recruit	
Base	0.485 kg
Current	0.210 kg
Spawning potential reduction	0.432
Average yield per recruit	0.179 kg
Natural Mortality	0.364
Fishing Mortality (2005-2007)	
Gill net, average 6+	0.667
Trap net, average 6+	0.009
Sea lamprey mortality (ML)	
Average 6+ (2005-2007)	0.029
Total mortality (Z)	
Average 4+ (2005-2007)	0.872
Average 4+ (2007)	0.829
Exploitable Biomass (age 6+)	
Average (2005-2007)	4 065 449 kg
Spawning biomass	
Average (2005-2007)	6 564 379 kg
Quota (2007)	1 054 822 kg

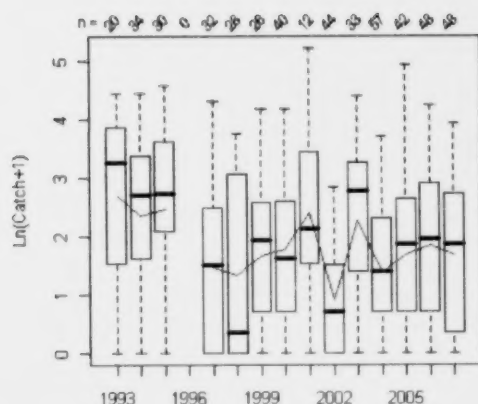


Figure 12. Box-whisker plot of the catch of lake whitefish in the OMNR's southern Lake Huron offshore assessment program 1993-2007. The solid line indicates the mean catch.

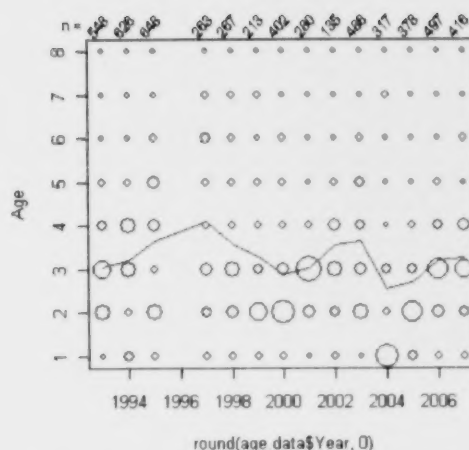


Figure 13. Bubble plot of the age distribution of lake whitefish caught in the OMNR's southern Lake Huron offshore assessment program 1993-2007. The size of each bubble is proportional to the contribution of that age to the catch in that year. The solid line indicates the mean age of the catch.

The age composition of lake whitefish from the gill net catch was dominated by six, seven and eight year olds, although fish from two to twelve years of age were observed in the catch (Fig. 13).

The mean age in the gill net catch was up slightly from 2006 to 7.4 years. The trap net catch consistently has a mean age less than that of the gill net fishery and that was the case in 2007 (6.7 yrs). However, only one trap net catch was sampled this year.

Growth (size at age) appears to have stabilized and even increased slightly for some age classes since 2003. Average weight at age is still markedly lower than it was prior to 1997.

Estimated mortality, from the age composition in the gill nets, was high ($A=70.9\%$) while, SCAA modeling estimated annual mortality to be 58%. The UGLMU used 65% as an upper threshold for annual mortality for exploited lake whitefish populations. These two estimates suggest that total mortality is very close to this upper threshold.

Population modeling suggests that the total biomass of lake whitefish in QMA 4-5 is up in recent years, but is still well below the abundance observed in the 1990s. The exploitable biomass to harvest ratio (EBH) is relatively low, largely due to declining harvest.

The SPR value was 0.432, the lowest in the main basin. This suggests that current harvest levels may have the ability to impact spawning potential in this QMA, although this value is still higher than typically used as a lower limit for exploited Great Lakes lake whitefish stocks (Ebener et al. 2005).

Catches of lake whitefish in the offshore index program in QMA 4-5 have remained stable or increased slightly in recent years but are still noticeably lower than the period prior to 1996 (Fig. 12). A broad age distribution is often observed in this index program (Fig. 13). The pre-recruit index continues to suggest that the 2003, and to a lesser extent, 2004 year classes are stronger than average. These year classes are expected to recruit to the commercial fishery over the next couple of years.

Summary and Recommendation

CPUE data suggests declining abundance in this QMA over several years. Total annual mortality exceeds the UGLMU threshold for whitefish, and modeled estimates of spawning stock biomass are declining as well. This suggests that exploitation levels in this QMA may be too high.

Conversely, the gill net fishery harvests a broad age distribution of fish from QMA 4-5. The presence of two relatively strong year classes in the pre-

recruit index suggests that signs of high exploitation may not be long term.

RECOMMENDATION: **-10%**

Lake Whitefish QMA 4-7

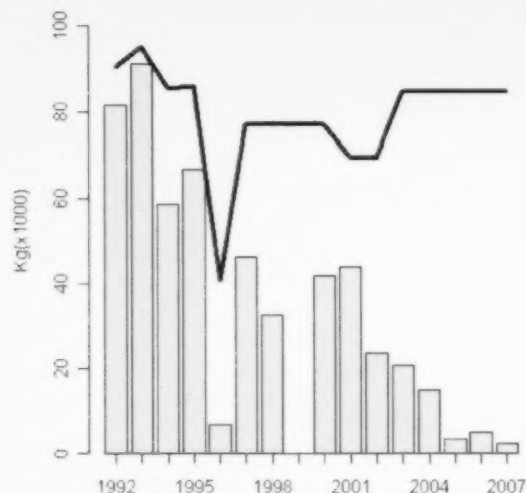


Figure 14. Lake whitefish quota (line) and harvest (bars) from management area 4-7.

Harvest of lake whitefish from QMA 4-7 decreased by 53% in 2007 to 2 402 kg which was just under 3% of the quota (Fig. 14). CPUE also declined although both harvest and effort are minimal in this QMA.

No age data was available for lake whitefish harvested in 2007 from this QMA. For cohort analysis, average age proportions from 2005 and 2006 were used to estimate age composition in 2007. SCAA analysis was conducted on QMA 4-4 and 4-7 data combined (see QMA 4-4). The combined SCAA model suggests that exploitable biomass has been trending upwards in central Lake Huron over the past several years, although it is still noticeably lower than during the mid to late 1990s.

Summary and Recommendation

QMA 4-4 and 4-7 data were combined for SCAA analysis. See QMA 4-4 for a more detailed summary. Current harvest in this QMA is likely inconsequential to the population, although the disparity between quota and reported harvest is a management concern.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 5-1

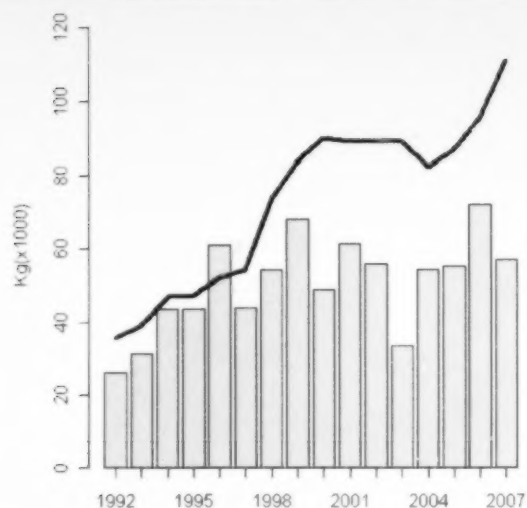


Figure 15. Lake whitefish quota (line) and harvest (bars) from management area 5-1.

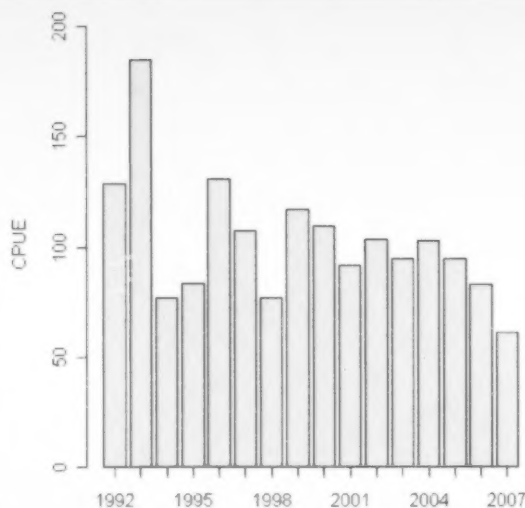


Figure 16. Lake whitefish gill net CPUE (kg/km) for management area 5-1.

Harvest of lake whitefish from QMA 5-1 was down in 2007 to a level similar to the average seen over the past several years (Fig. 15). In 2007, only 52% of the quota was harvested. Gill net fishing effort increased slightly in 2007 leading to a further decline in CPUE. CPUE has been trending downward over the past 10-12 years. It has reached its lowest level since the 1980s (Fig. 16).

The age distribution of the catch of lake whitefish from QMA 5-1 remains broad; eleven different age classes were observed. The catch in 2007 was bimodal with ages five and nine dominating the catch. The mean age of the catch has declined from 9.4 in 2006 to 7.8 in 2007. Older fish are common, likely due to both high abundance and the larger mesh sizes that are typically fished in this QMA.

Estimates of total annual mortality (A), which were calculated using catch curves, have been exceptionally low over the past five years, ranging from less than 20% to close to 40% per year. Mortality estimates before 2003 were considerably higher, often exceeding 50% per year.

Exploitable biomass estimated using cohort analysis has been trending downward from a high in 2003. In 2007, the estimated exploitable biomass increased 20%. However, the

total harvest expressed as a proportion of exploitable biomass (EBH ratio) is still below the upper threshold used by the UGLMU for the management of exploited lake whitefish stocks.

Unfortunately, there is no current independent index program in this QMA. Consequently, there is a large degree of uncertainty regarding the recruitment of year classes before they appear in the commercial fishery. However, the appearance of five year olds as one of the dominant year classes in the catch is encouraging.

Summary and Recommendation

The harvest of lake whitefish from this QMA was down in 2007 and CPUE has been slowly trending down over the past decade. The age distribution of the catch is very broad with several year classes well represented in the harvest. Estimates of total annual mortality continue to be low, suggesting that current exploitation is not adversely affecting the whitefish population in this QMA.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 5-2

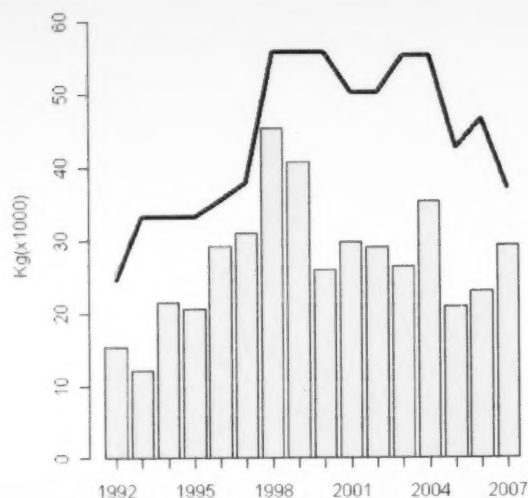


Figure 17. Lake whitefish quota (line) and harvest (bars) from management area 5-2.

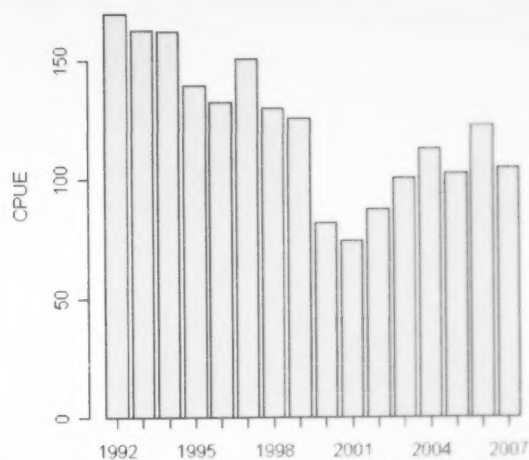


Figure 18. Lake whitefish gill net CPUE (kg/km) for management area 5-2.

Harvest of lake whitefish from QMA 5-2 was up again in 2007 and the proportion of the quota which was harvested increased to 79% (Fig. 17). CPUE was down from 2006, it was consistent with CPUE over the past five years. CPUE remains lower than values reported in the 1990s (Fig. 18).

No biological samples have been collected from the commercial catch in QMA 5-2 since 2005. This is largely due to the remoteness of the fisheries in this QMA and to the sporadic nature of the fishing effort that occurs in this area. Historically, the age composition of the catch from QMA 5-2 has been very similar to that of QMA 5-1, which is characterized by numerous age classes.

Dormant or inactive quota continues to be an impediment to effective management in this QMA. A portion of the dormant quota was pooled in 2007 and made available to active licence holders in this QMA. Unfortunately, the quota pool was not accessed by eligible fishermen.

Summary and Recommendation

Harvest from this QMA has remained relatively stable over the past six years. During that time, reported CPUE has remained relatively unchanged, although it still remains below pre-2000 values.

The absence of biological samples from the catch and dormant quota continue to be issues in this QMA.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 5-3

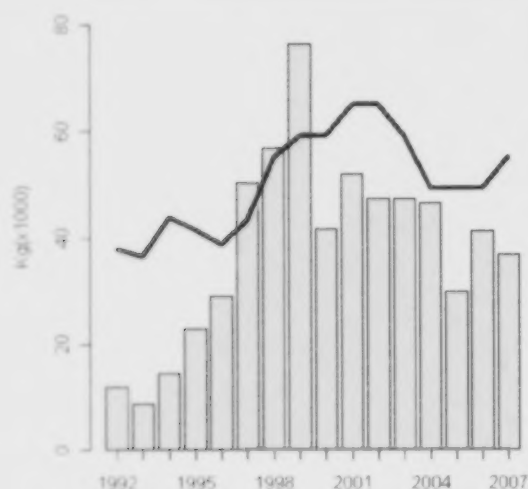


Figure 19. Lake whitefish quota (line) and harvest (bars) from management area 5-3.

The harvest of lake whitefish from QMA 5-3 was down slightly from 2007 and it is still below the level of harvest reported over the past decade (Fig. 19). Overall, only 66.6% of the issued quota was harvested. Gill net effort increased by 22% to 128.1 km while CPUE declined from 2006 levels. CPUE is still very close to the average reported over the past decade, although it is substantially lower than the values reported prior to the early 1990s (Fig. 20).

Eight different age classes were observed in the 2007 catch, ranging from 5 to 12 years of age. Eight to ten year old fish were the most common age classes, although seven year old fish were also well represented. The mean age of the catch jumped to 8.6 years in 2007, and is the highest value observed in the time series.

Like other parts of Georgian Bay, the age distribution of lake whitefish in the commercial catch was dominated by seven to ten year old fish in recent years. This is in contrast to the catches from the 1990s which were typically characterized by five to seven year old fish, with relatively few older individuals.

Estimates of total annual mortality (A) calculated using catch curves have been relatively low over the past six years but have been increasing

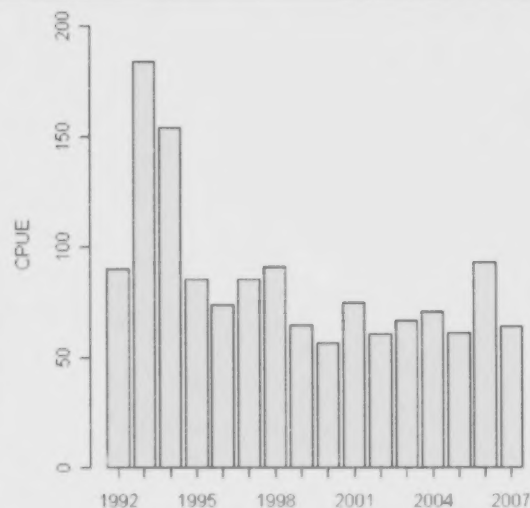


Figure 20. Lake whitefish gill net CPUE (kg/km) for management area 5-3.

steadily for the past four years. The estimate based on the 2007 age composition was 48.9%, below the upper threshold used by the UGLMU for exploited whitefish populations (65%).

Unfortunately, there is no current independent index program in this QMA. As such there is some degree of uncertainty regarding the strength of year classes before they recruit to the commercial fishery.

Summary and Recommendation

Harvest is down over the past seven years and the reported CPUE is very close to the average for the past decade. Total annual mortality has been low, suggesting that the current exploitation level does not pose a significant risk to the stocks in this QMA. Demographic changes in the catch and uncertainty with respect to recruitment of younger year classes continues to be a concern in this QMA.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 5-4

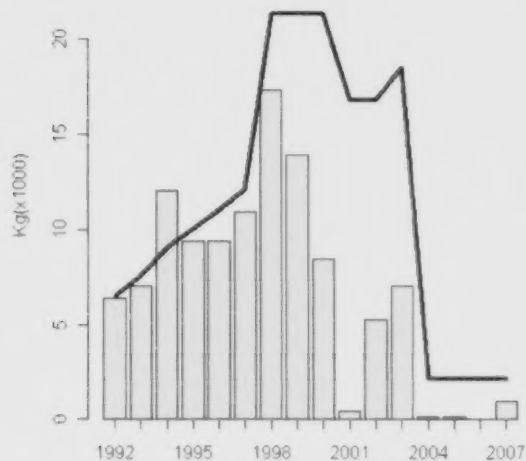


Figure 21. Lake whitefish quota (line) and harvest (bars) from management area 5-4.

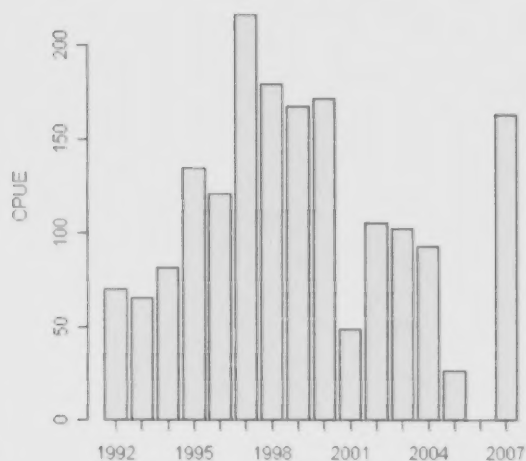


Figure 22. Lake whitefish gill net CPUE (kg/km) for management area 5-4.

The majority of the commercial quota was retired in this QMA in 2004 for lake trout conservation purposes. Since then, there has been only limited fishing activity.

Four commercial fishing events took place in QMA 5-4 in 2007. Harvest was only 999 kg while total effort was 6.1 km of gill net (Fig. 21).

Reported CPUE was relatively high in 2007 (163.7 kg/km) (Fig. 22). However, given the small number of events and the time of year that they occurred (fall); it is difficult to say if CPUE actually reflects the broad scale abundance of lake whitefish in this QMA.

No catch sampling occurred in 2007.

Summary and Recommendation

A very small amount of lake whitefish effort and harvest occurred in this QMA in 2007. It is unlikely that the current harvest and effort levels pose any risk to the lake whitefish stocks in this QMA.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 5-5

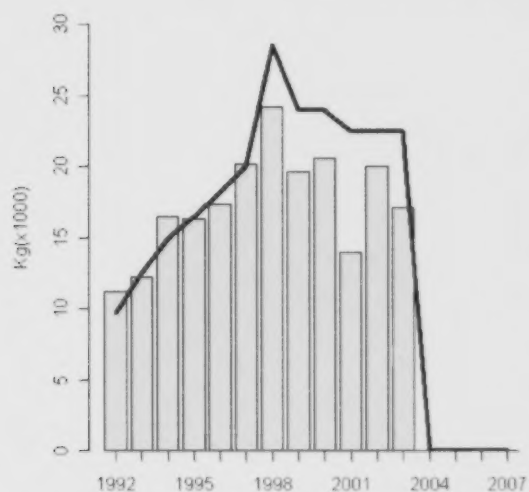


Figure 23. Lake whitefish quota (line) and harvest (bars) from management area 5-5.

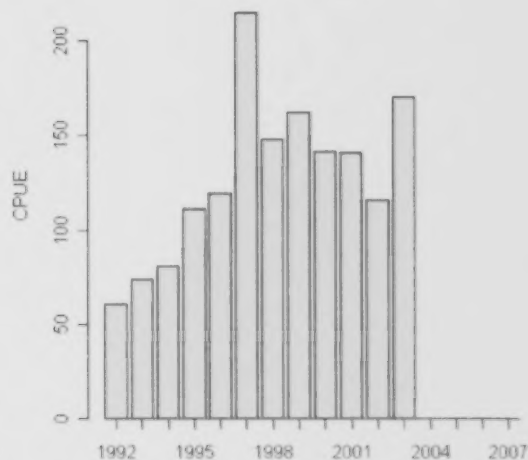


Figure 24. Lake whitefish gill net CPUE (kg/km for management area 5-5).

Summary and Recommendation

There is currently no active fishery in this QMA. There was no lake whitefish harvest or effort reported in 2007.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 5-6

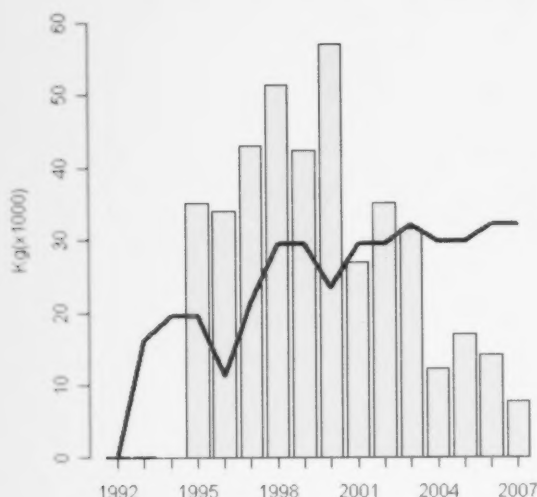


Figure 25. Lake whitefish quota (line) and harvest (bars) from management area 5-6.

Harvest of lake whitefish from QMA 5-6 was down again in 2007 (Fig. 25). This harvest is the lowest reported in recent years. In particular, the harvest since 2004 is noticeably lower than the harvest reported from this QMA between 1995 and 2003. On a zone wide basis, only 24.3% of the issued quota was harvested in 2007.

Reported CPUE was down from 2006; is the lowest value seen since 1991. CPUE in this QMA remained relatively stable between 1999 and 2002 but has been declining ever since.

No biological samples or ages were available from this QMA for 2007. For the purposes of further analyses, it was assumed that the age and size distributions of the lake whitefish harvested in 2007 were similar to those observed in 2005 and 2006. The catch in those years was comprised of mostly five to seven year old fish, slightly younger than other parts of Georgian Bay. As a result, the mean age has been slightly lower than in other parts of Georgian Bay as well.

The catch curve mortality estimate (A) using 2006 data was 44.4%, below the upper threshold used by the UGLMU for management of exploited lake whitefish stocks. While this mortality estimate is higher than most recent years in this QMA, it is considerably lower than the 1997 to 1999 period,

when harvest peaked and the estimate of total annual mortality ranged from 74 – 81%.

Like other QMAs in southern Georgian Bay, the bulk of the harvest in 2005 and 2006 was from the 1999 year class. It is likely that this age class continued to contribute substantially to the catch in 2007.

Summary and Recommendation

Harvest continues to be well below the allocated quota in this zone and recent estimates of total annual mortality are below the upper threshold used by UGLMU for lake whitefish stocks. However, the low CPUE suggests that lake whitefish may not be as abundant in this QMA as they used to be. Furthermore, the absence of biological samples in 2007 and the increasing disparity between quota and harvest are reasons for concern.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 5-7

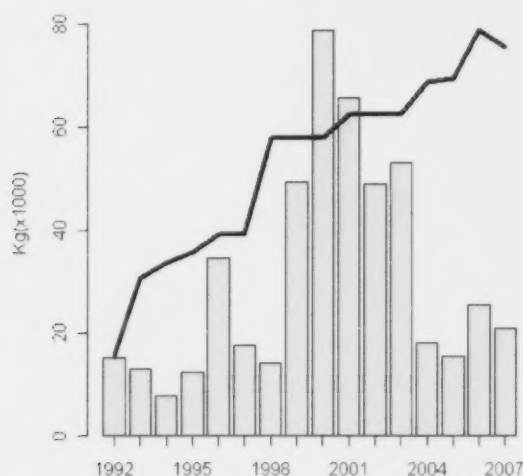


Figure 26. Lake whitefish quota (line) and harvest (bars) from management area 5-7.

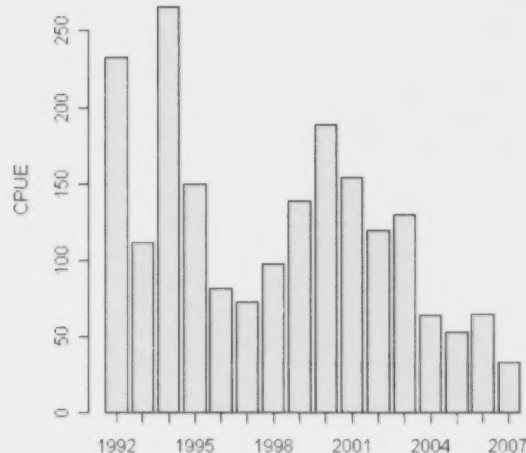


Figure 27. Lake whitefish gill net CPUE (kg/km) for management area 5-7.

Harvest of lake whitefish from QMA 5-7 was down slightly in 2007 relative to 2006 but has been essentially unchanged since 2004 (Fig. 26). On a zone-wide basis, only 27.8% of the issued quota was harvested. Intermittent participation by part of the fishery in this QMA continues to be an issue.

Total fishing effort was up substantially (35%) from 2006, resulting in a noticeable decline in CPUE (33.5 kg/km) (Fig. 27). This CPUE is the lowest ever reported in this QMA and is among the lowest on the lake. The mesh sizes used for fishing in this QMA changed in 2003, suggesting the last four years of CPUE data may be directly comparable to the earlier time series. While part of this decline may be attributable to changes in the fishery, changes in whitefish abundance and/or distribution cannot be ruled out.

Only six age classes were observed in the catch samples from this QMA in 2007. Fish ranged from five to ten years old, but seven and eight year old fish dominated the catch. This resulted in a substantial increase in the mean age from 6.9 years in 2006 to 7.6 years in 2007. More importantly, there has been a noticeable truncation of the age distribution in the catch from this QMA in recent years. Between 1998 and 2003, fish older than 10 years of age were relatively common in the catch from this QMA, but since that time they have

become increasingly rare.

Annual estimates of total mortality (A) calculated using catch curve analysis show that mortality has been rising steadily in recent years and that in the most recent years (2005, 2006 and 2007) total annual mortality has been close to or above the upper limit used by the UGLMU for the management of exploited lake whitefish stocks (65%). In contrast, estimates of the total annual mortality ranged from 27 to 52% per year between 1997 and 2004.

There is no independent index program in QMA 5-7, but the apparent absence of recruitment in recent years throughout southern Georgian Bay is a significant concern (Speers and Cottrill, 2007).

Summary and Recommendation

Harvest in this QMA is down from the peak seen in the 1999-2003 period and CPUE is at an all time low. The age distribution in recent years suggests that mortality is excessive; older fish are absent and there is little evidence of recruitment following the 1999 year class. The potential level of exploitation is of great concern given the existing information.

RECOMMENDATION: -20%

Lake Whitefish QMA 5-8

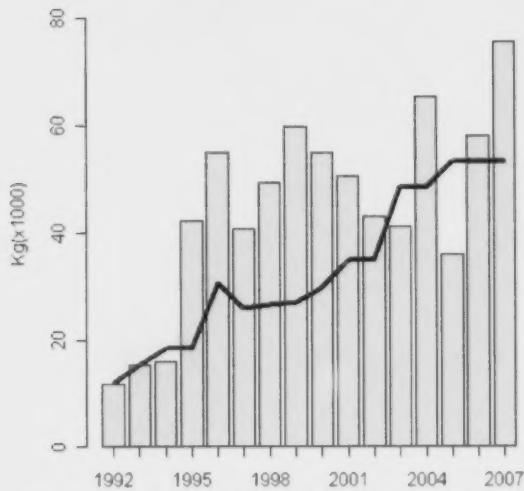


Figure 28. Lake whitefish quota (line) and harvest (bars) from management area 5-8.

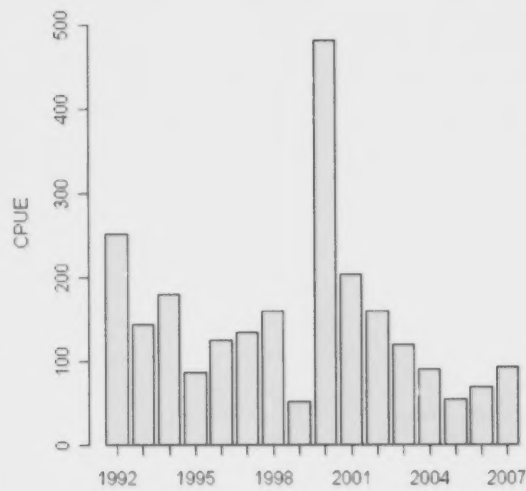


Figure 29. Lake whitefish gill net CPUE (kg/km) for management area 5-8.

The harvest of lake whitefish in QMA 5-8 increased in 2007 to the highest ever observed in this QMA (Fig. 28). On a zone wide basis, 142% of the allocated quota was harvested. Fishing effort declined slightly in 2007 but was second only to 2006. Effort in the past two years is more than double the 10 year average for this QMA.

Although CPUE was up in 2007, it was still among the lowest CPUE values reported in this QMA in the past 20 years (Fig. 29). The reported CPUE in 2007 (93.2 kg/km) was noticeably lower than the peak CPUE from 2000 (481.6 kg/km). Between 2000 and 2005, CPUE of lake whitefish steadily declined.

No age data were available for this QMA in 2007. However, the mean age in this QMA has been increasing since 1998 to 7.04 in 2006. Prior to 1998, the mean age was typically between 4.8 and 5.5 years and the age distribution was characterized by several different year classes. In recent years, the age composition of the catch has been largely dominated by the single, exceptionally large 1999 year class.

The catch curve mortality estimate based on 2006 data is below the upper threshold used by UGLMU for lake whitefish (65%) and is within the range typically observed in this QMA. Catch curve mortality estimates ranged from 33% to 52%

SCAA Model Summary Lake Whitefish QMA 5-8

Data:	1994-2007	Ages:	3-10
Gear:	Gill nets only		
Maturity			
Age at First Spawning			6 years
Age at 50% maturity			7 years
Spawning Biomass per Recruit			
Base			0.791 kg
Current			0.276 kg
Spawning potential reduction		0.349	
Average yield per recruit			0.655 kg
Natural Mortality			0.288
Fishing mortality (2005-2007)			
Gill net, average 6+		0.850	
Sea Lamprey Mortality (2005-2007)			
Average 6+			0.079
Total Mortality			
Average 4+ (2005-2007)			1.221
Average 4+ (2006)			1.444
Estimated Biomass (age 6+)			
Average (2005-2007)			352 311 kg
Estimated Spawning biomass			
Average (2005-2007)			199 963 kg
Quota (2007)			53 326 kg

between 1992 and 2006.

Cohort analysis suggests that the total exploitable biomass continued to decrease in 2007 from a peak in 1999-2000 (Fig. 30). The last moderately strong year class was in 2001 and independent assessment has failed to detect any subsequent year classes. As a result, exploitable biomass is projected to decline again in 2008.

The SCAA model suggests that biomass has been increasing since 2003. However, this increase is largely attributable to the strong recruitment of recent year classes for which there is little empirical evidence from our independent assessment program. It is unlikely that these projected increases in biomass will occur. Additionally, spawning biomass continues to be below the long term average, despite increases in total exploitable biomass.

The catch in recent years from this QMA has been largely comprised of fish from the 1999 year class along with modest contributions from the 2000 and 2001 year classes. The strength of the 1999 year class was reflected in the pre-recruit index (PRI) value (44.9), which was more than four times higher than the long-term average. Many of the year classes currently in the fishery had PRI values that are above the long term average. However, year classes following 2001 have PRI values that have ranged from 0.0 to 2.79. These year classes have not yet been seen in the commercial fishery. Recruitment of recent year classes continues to be a major concern in this QMA.

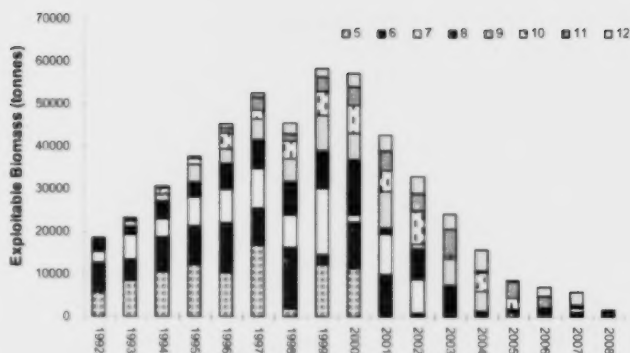


Figure 30. Estimated exploitable biomass of lake whitefish by age in QMA 5-8 from 1991 to 2007 (including forecast for 2008).

Summary and Recommendation

The 1999 to 2001 year classes have supported the fishery in this QMA for several years. Overall, mortality is within the range typically observed for exploited lake whitefish stocks. However, exploitable biomass continued to decrease in 2007. The apparent absence of recruitment and the shrinking number of age classes in the catch are cause for concern. Fishery independent index netting suggests that the strength of all year classes following the 2001 cohort is extremely weak.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 5-9

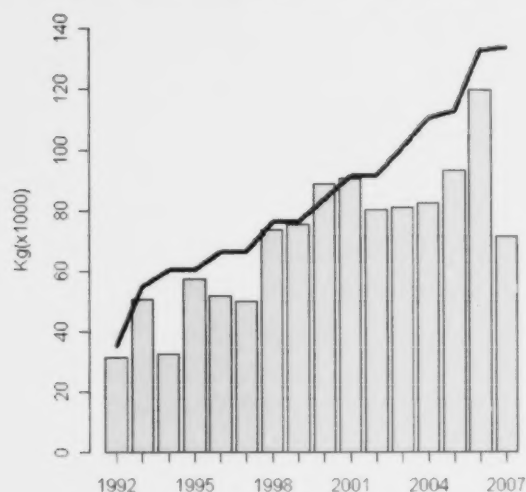


Figure 31. Lake whitefish quota (line) and harvest (bars) from management area 5-9.

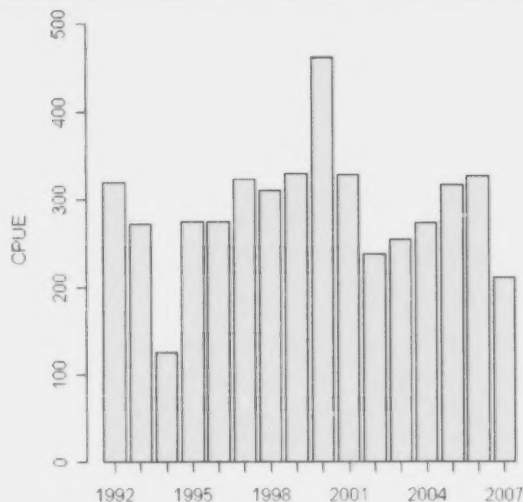


Figure 32. Lake whitefish gill net CPUE (kg/km) for management area 5-9.

Harvest of lake whitefish from QMA 5-9 declined noticeably in 2007 to its lowest in 10 years (Fig. 31). Harvest has been increasing steadily over the past 20 years. Only 53.4% of the allocated quota was harvested in 2007. Fishing effort was down slightly in 2007 (8%), but was still the second highest effort reported over the last two decades.

CPUE declined dramatically in 2007 after increasing for four years in a row (Fig. 32). CPUE for 2007 is well below the long term average for this QMA.

The catch from this QMA 2007 was composed of only six different year classes between 5 and 10 years of age. The 2000 year class dominated the catch (43%) and only three year classes (1999, 2000, and 2001) accounted for 96% of the catch. The absence of older and younger fish has never been observed in this QMA. Fish younger than five years of age have been absent from the catch samples since 2005. This reflects a substantial change in the age distribution of the catch in recent years.

Catch curve mortality estimates have been increasing for five consecutive years. The estimated total annual mortality (A) for 2007 was

CAA Model Summary Lake Whitefish QMA 5-9

Data:	1978-2007	Ages:	3-10
Gear:	Gill nets only		
Maturity			
Age at First Spawning			6 years
Age at 50% maturity			7 years
Spawning Biomass per Recruit			
Base			0.978 kg
Current			0.280 kg
Spawning potential reduction			0.287
Average yield per recruit			0.348 kg
Natural Mortality			0.288
Fishing mortality (2005-2007)			
Gill net, average 6+			0.141
Sea Lamprey Mortality (2005-2007)			
Average 6+			0.039
Total Mortality			
Average 6+ (2005-2007)			0.468
Average 6+ (2007)			0.468
Estimated Biomass (age 6+)			
Average (2005-2007)			805 370 kg
Estimated Spawning biomass			
Average (2005-2007)			402 720 kg
Quota (2007)			133 660 kg

77.0%, well above the upper threshold used by the UGLMU for the management of exploited lake whitefish stocks (65%). The estimate of total annual mortality in 2007 was the highest on record for this QMA.

Cohort modeling suggests that exploitable biomass in this QMA peaked in 2004 as the 1999 year class entered the fishery (Fig. 33). Exploitable biomass has since declined. The 1999 year class continues to form the largest portion of the exploitable biomass (>30%). The apparent absence of recruitment would suggest that exploitable biomass will continue to decline in this QMA as the 1999 year class moves through the fishery. The dominance of a single year class is a distinct shift from the broad age distributions that characterized this fishery prior to 2004. During that time, the exploitable biomass was consistently made up of four or more age classes that were relatively evenly represented (Fig. 33).

The SCAA and cohort models show similar trends about the available biomass of lake whitefish in this QMA, with identical peaks in 2004 coinciding with the appearance of the 1999 year class. The SCAA model also suggests that the whitefish stock in this QMA is among the most heavily exploited on Lake Huron.

While there is no independent assessment program in this QMA, trends in recruitment between 5-8 and 5-9 are often highly correlated. As a consequence, the poor recruitment of year classes after the 2001 cohort is a concern for this QMA as well. The lack of fish under five years of age since 2004 is consistent with low recruitment in recent years. This contrasts to the 1990s, when four, and to a lesser extent three, year old lake whitefish were regularly sampled in the commercial catch from this QMA.

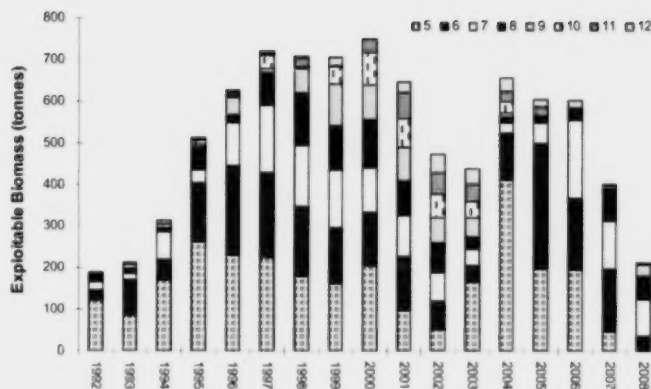


Figure 33. Estimated exploitable biomass of lake whitefish by age in QMA 5-9 from 1991 to 2007 (including forecast for 2008).

Summary and Recommendation

There are a number of indicators that suggest that the whitefish stocks in QMA 5-9 are approaching their limit. Exploitable biomass has declined over the past three years in this QMA to their lowest levels in more than a decade. The demographics of the catch have changed from a population that was characterized by numerous year classes to one that is composed of two or three year classes. There are indications that total annual mortality is higher than desired. The apparent absence of recruitment following the 2001 year class is also a serious concern in this QMA.

RECOMMENDATION: -10%

Lake Whitefish QMA 6-1

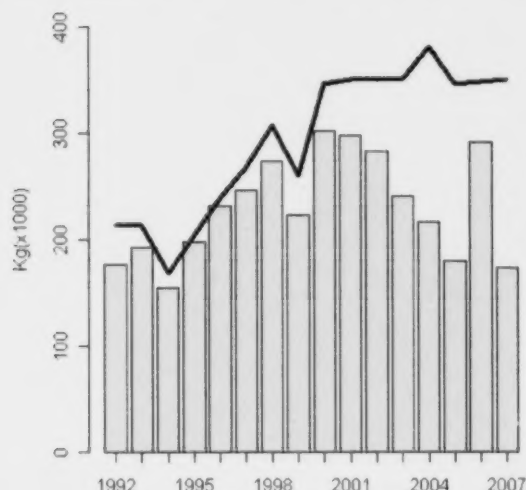


Figure 34. Lake whitefish quota (line) and harvest (bars) from management area 6-1.

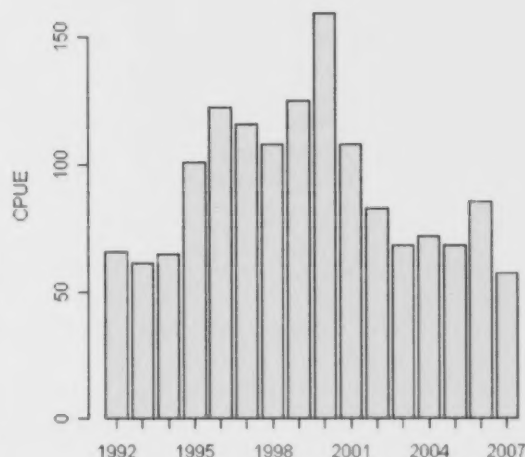


Figure 35. Lake whitefish gill net CPUE (kg/km) for management area 6-1.

Harvest of lake whitefish in QMA 6-1 declined in 2007 relative to 2006 (Fig. 34). Harvest was similar to that seen in 2005 and is among the lowest values reported over the past 15 years. On a zone wide basis, 49.4% of the issued lake whitefish quota was harvested.

Gill net fishing effort declined slightly in 2007 and there was a noticeable decline in the use of larger mesh sizes.

CPUE has been declining in QMA 6.1 since a peak in 2000 (159 kg/km) (Fig.35). In 2007, the CPUE reached its lowest level since 1991 (57.3 kg/km).

The composition of the catch continues to range over several ages (3 to 13 years), with four to seven year old fish forming the bulk of the catch. The mean age of the catch (6.2 years) is down from last year and is similar to the average seen in this QMA for the past decade. The mean age of the catch had been trending upward over the past 10-15 years.

Estimated total mortality calculated from the age composition of the catch in 2007 was 44.5%, below the upper threshold used by the UGLMU for whitefish management and well within the range typically observed in this QMA.

SCAA Model Summary Lake Whitefish QMA 6-1

Data:	1978-2007	Ages:	3-10
Gear:	Gill nets only		
Maturity			
Age at First Spawning			3 years
Age at 50% maturity			3 years
Spawning Biomass per Recruit			
Base			1.068 kg
Current			0.655kg
Spawning potential reduction			0.614
Average yield per recruit			0.316 kg
Natural Mortality			0.335
Fishing mortality (2005-2007)			
Gill net, average 6+			0.302
Sea Lamprey Mortality (2005-2007)			
Average 6+			0.081
Total Mortality			
Average 6+ (2005-2007)			0.719
Average 6+ (2007)			0.723
Estimated Biomass (age 6+)			
Average (2005-2007)			638 129 kg
Estimated Spawning biomass			
Average (2005-2007)			603 696 kg
Quota (2007)			351 162 kg

Cohort analysis indicated that the exploitable biomass of lake whitefish in this QMA has been declining. However, the strong 2003 year class is expected to enter the fishery and it will contribute substantially to the exploitable biomass over the next several years.

SCAA models suggest that the lake whitefish biomass in QMA 6-1 has been increasing slightly in the past few years, although it is still substantially lower than the 1994 to 2000 period.

Summary and Recommendation

The harvest and CPUE were both down in 2007 relative to 2006 and were also much lower than the long term average. However, the age distribution and catch curve mortality rate are consistent with a healthy, robust lake whitefish population. The 2003 year class is expected to recruit to the fishery and support the harvest for the next several years.

RECOMMENDATION: **No Change**

Lake Whitefish QMA 6-3

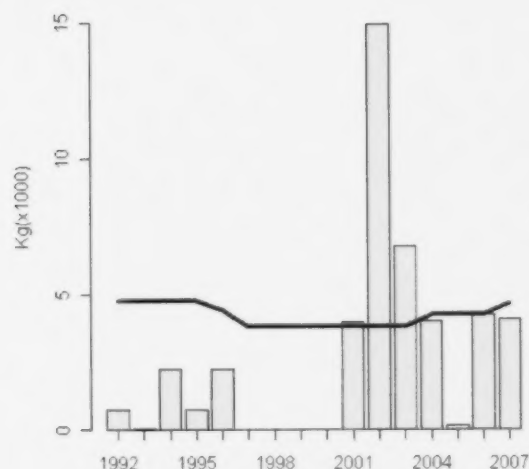


Figure 36. Lake whitefish quota (line) and harvest (bars) from management area 6-3.

Harvest of lake whitefish from QMA 6-3 did not change from 2006 to 2007 (Fig. 36). On a zone-wide basis, 87.2% of the issued lake whitefish quota was harvested. Fishing effort doubled in 2007 in this QMA, although it has been very inconsistent in recent years.

CPUE of lake whitefish was down from 2006, still noticeably lower than the peak CPUE reported in the early 1990s (Fig. 37). The sporadic nature of the fishery in this QMA makes the interpretation of CPUE data difficult.

Unfortunately, there were no samples collected from the commercial harvest of lake whitefish in QMA 6-3. This precludes a discussion about the age distribution of the catch or the calculation of catch curve mortality estimates.

Independent assessment netting in northeast Georgian Bay conducted by the AOFRC between 2000 and 2004 suggested that recruitment of the 1999-2001 year classes was strong in this part of the lake. However, there is little information about the strength of subsequent year classes. The attributes of the harvest in neighbouring QMAs suggest that lake whitefish stocks in northeast Georgian Bay and the North Channel are healthy and that they can support existing harvest levels.

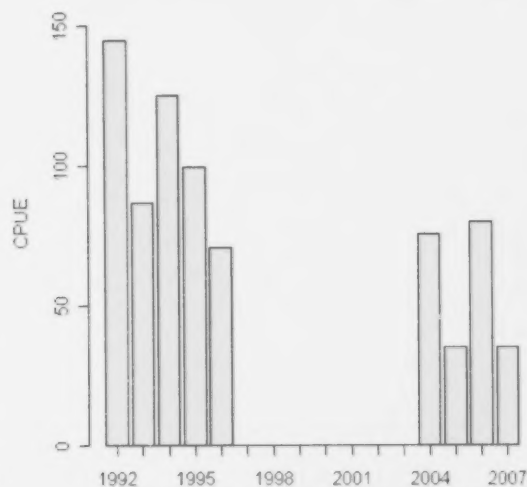


Figure 37. Lake whitefish gill net CPUE (kg/km) for management area 6-3.

Summary and Recommendation

Harvest and CPUE were both down in 2007.

RECOMMENDATION: **No Change**

Bloater (Deepwater Chub) – Overall

Total lake wide deepwater chub harvest in 2007 was only 444 kg. Targeted effort (3.4 km) was reported in only two QMAs this year. There continues to be little or no recruitment of deepwater chub to commercial gear in Lake Huron.

Independent assessment data suggest that small deepwater chub are relatively abundant in the offshore waters of the main basin and parts of Georgian Bay (Schaeffer et al. 2007). However, commercial sized deepwater chub continue to be rare. The reason for the absence of large deepwater chub is not entirely clear. It may reflect a shift in the offshore fish community as a response to the widespread establishment of non-native species such as zebra and quagga mussels or possibly a response to increasing numbers of large native predators.

The pre-recruit index for the southern Lake Huron index program suggests that the 2003 and 2004 year classes are both strong, although it will be several years before they recruit to commercial fishing gear.

Summary and Recommendation

There is no indication that deepwater chub abundance has increased to the point that fully allocated harvests are possible.

RECOMMENDATION: 50% of BASE (lake wide)

Walleye - Overall

Walleye quotas for the commercial fishery are managed in two manners in Lake Huron, as production quotas and as incidental quotas. Production quota areas are considered to be those with self sustaining populations large enough to allow targeted harvesting. These include QMAs 4-5, 5-1, 5-2, 5-7, and 6-1. In all other QMAs, small walleye quotas have been allocated to allow for the occasional incidental capture of this species while targeting other species, in most cases lake whitefish or yellow perch. The status of stocks in QMA where walleye are managed using incidental quotas are not discussed further.

The lake wide harvest of walleye declined slightly in 2007 but remained higher than the 2002 to 2005 period. Harvest declined in the southern Main basin and increased in the North Channel. Harvest in the southern Main basin continues to be below the pre-1994 levels while harvest in QMA 6-1 was closer to pre-1994 levels in 2007 than in any other year since. This is the second year in a row that harvest in the North Channel increased measurably.

The recent jump in harvest and CPUE in both the North Channel and the main basin is almost entirely attributable to the appearance of a single, exceptionally strong year class (the 2003 year class), rather than a full recovery of the walleye populations. There is some evidence of subsequent year classes, but these are dwarfed by the 2003 cohort. Despite the increase in harvest and CPUE, walleye populations across the basin have not recovered to pre-1995 levels. There is very little evidence of the 2003 year class in most Georgian Bay walleye populations from onboard catch sampling, however, independent fisheries assessment work in some parts of Georgian Bay has confirmed the presence of this strong year class. In general, walleye stocks continue to be depressed relative to historical abundance in Georgian Bay.

Walleye QMA 4-5

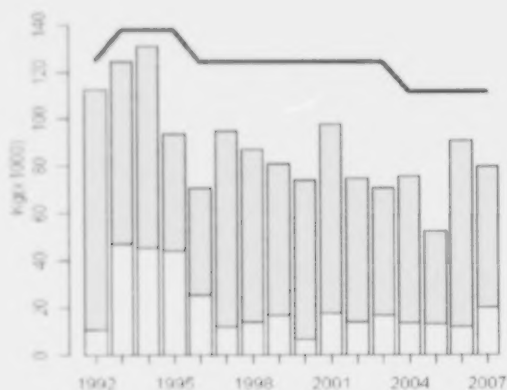


Figure 38. Walleye quota (line) and harvest (bars) from management area 4-5.

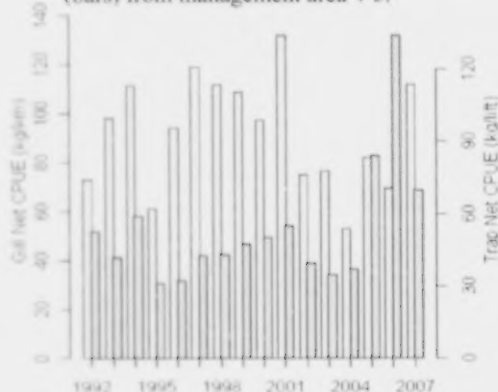


Figure 40. Walleye gill net CPUE (kg/km) and trap net CPUE (kg/lift) for management area 4-5.

Harvest of walleye was down slightly in 2007 from 2006 (Fig. 38). On a zone wide basis, 71.5% of the issued quota was harvested in 2007. Harvest from gill nets increased for the first time in several years, while trap net harvest declined slightly. Approximately 75% of the harvest in 2007 came from trap nets.

Targeted fishing effort remains relatively low (Fig. 39). Gill net effort was 12% of that in 1995 (peak harvest year) while trap net effort was less than 60% of the effort in that same year.

The CPUE of walleye in trap nets declined in 2007 but remained high compared to the past 20 years (Fig. 40). CPUE in trap nets has been high for three

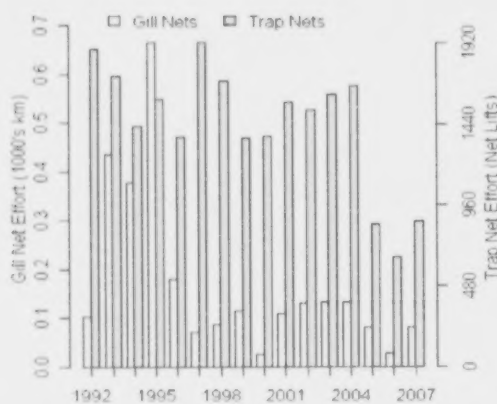


Figure 39. Walleye targeted effort by gear for management area 4-5.

years in a row. Gill net CPUE increased by 38% in 2007 and was higher than it has been in five years.

The age distribution of walleye in the catch from both trap nets and gill nets in QMA 4-5 continues to be dominated by the 2003 year class. Traditionally, age three and four fish made up the majority of the gill net catch and that continued to be the case in 2007. Similarly, the trap net harvest was traditionally made up of age two to four fish. This was the case as well in 2007. Catch at age information suggests that recruitment continues to occur (beyond the 2003 year class) in this QMA. The main difference between 2007 and historic data is that there are very few old walleye (>eight or nine) in the catch. Catches in the early 1990s had large contributions from these older fish. The mean

age in the gill net catch decreased in 2007 while the mean age of fish caught in the trap nets rose slightly between 2006 and 2007.

Like the age composition from the commercial catch, the catch of walleye in the OMNR's offshore index program was also dominated by four year olds, with 69% (42/62) of the walleye sampled belonging to this age class. The age of fish observed in the index program ranged from three to nine years.

Summary and Recommendation

The catch of walleye in southern Lake Huron in 2007 is comparable to harvest levels over the past decade. The 2003 year class has recruited to the fishery and continues to form the bulk of the catch. Subsequent year classes appear to be reasonably strong and will fully recruit to the commercial fishery in the upcoming years. The apparent absence of older individuals in the population continues to be a concern.

RECOMMENDATION: **No Change**

Walleye QMA 5-2

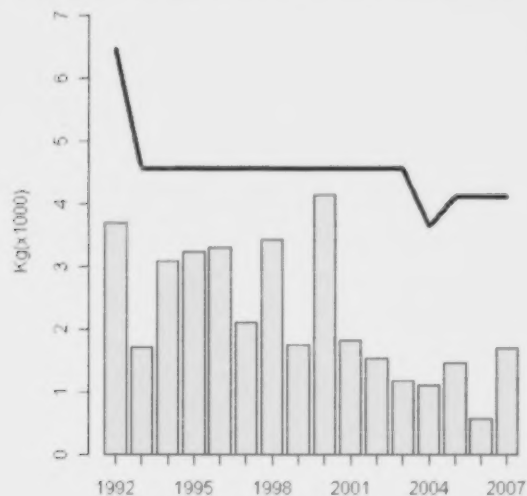


Figure 41. Walleye quota (line) and harvest (bars) from management area 5-2.

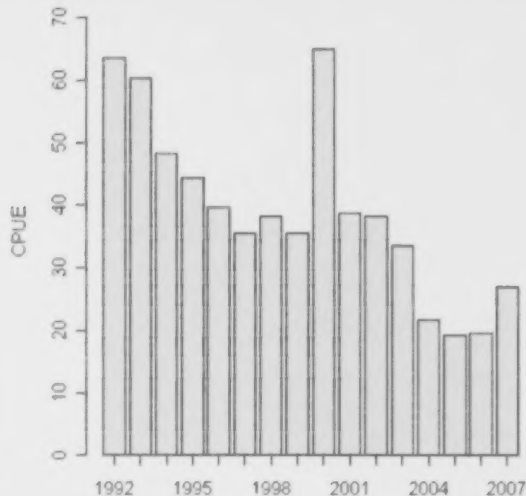


Figure 42. Walleye gill net CPUE (kg/km) for management area 5-2.

Harvest of walleye was up in 2007 to 1 705 kg, slightly above the harvest in the past five years (Fig. 41). It is still considerably lower than the average from 10 to 20 years ago. Harvest had been trending downward since 2000. On a zone wide basis, 41.5% of the walleye quota issued in QMA 5-2 was harvested in 2007.

Fishing effort, which was down in 2006, increased in 2007 to levels similar to those reported in recent years. Overall, fishing effort for walleye is relatively light in this QMA (46.6 km of gill net) compared to other production areas in Lake Huron.

While CPUE increased in 2007, it remains low in the time series for this QMA, and is consistent with a downward trend dating back to the early 1990s (Fig. 42).

Unfortunately, catch samples for walleye in this QMA have not been collected reliably in recent years, at least partially because targeted harvest events have become rare. As a consequence, mortality estimates and characteristics of the age distribution of the catch are not available.

Summary and Recommendation

Relatively low CPUE and harvest suggest that the walleye stocks in this QMA continue to be depressed. The status of the walleye stocks in eastern Georgian Bay in general, and QMA 5-2 specifically, continue to be a significant concern for the UGLMU.

RECOMMENDATION: **No Change**

Walleye QMA 5-7

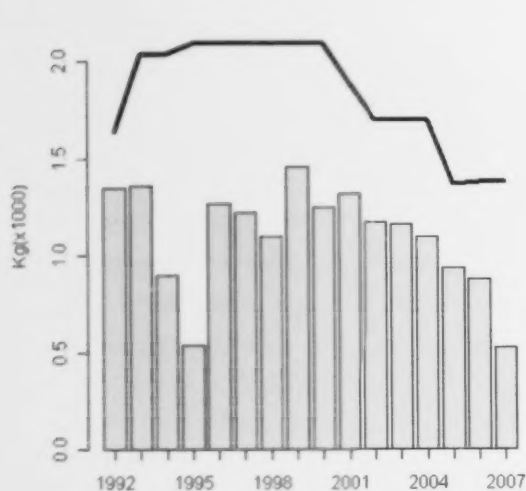


Figure 43. Walleye quota (line) and harvest (bars) from management area 5-7.

Harvest of walleye in QMA 5-7 is down again in 2007 (Fig. 43). This is the sixth year in a row where harvest is lower than the previous year. The harvest in 2007 (529 kg) was the lowest reported since 1981, and is consistent with a declining trend that started in 1999. On a zone wide basis, only 38.2% of the walleye quota issued for QMA 5-7 was harvested.

Targeted effort was unchanged from 2006 but is down substantially from peak values reported in 2004 and 2005. Current effort is well within the range observed over the last 10 years. CPUE however, continues to be very low compared to historical values, especially prior to 1997 (Fig. 44). The 2007 CPUE was less than 20% the value reported in 1996.

There were 35 reported fishing trips targeting walleye in 2007. Unfortunately, none of them were sampled, precluding a discussion of the age composition or calculation of recent total annual mortality estimates. Previous catch sampling has suggested that total annual mortality for walleye in this QMA is between 30 and 45% per year, above the bench mark currently used by the UGLMU for walleye management (45%).

Recruitment of new year classes into this commercial fishery is unknown.

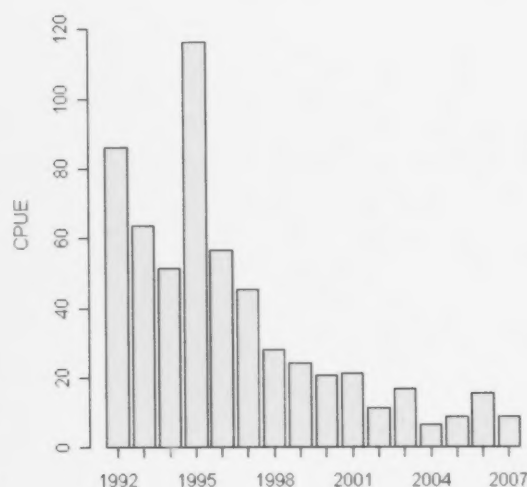


Figure 44. Walleye gill net CPUE (kg/km) for management area 5-7.

Historical independent fisheries surveys indicated this area supported a mixed stock fishery. One of these stocks, Moon River, is at a critically low level of abundance, whereas the other contributing stock in Severn Sound has shown recent signs of recovery including a strong 2003 year class.

Summary and Recommendation

Extremely low CPUE and declining harvest suggest that the walleye stocks in this QMA continue to decline. The status of the walleye stocks in eastern Georgian Bay in general, and QMA 5-7 specifically, continue to be a significant concern for the UGLMU.

RECOMMENDATION: -10%

Walleye QMA 6-1

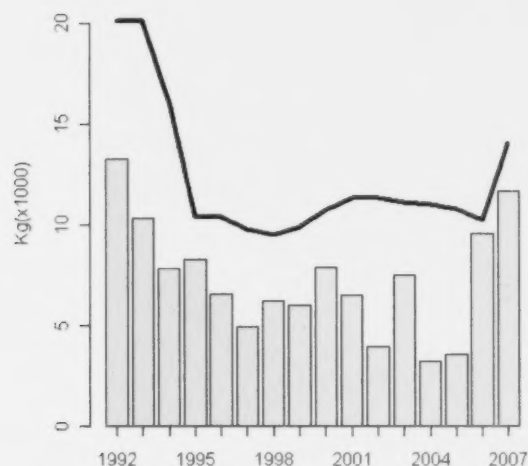


Figure 45. Walleye quota (line) and harvest (bars) from management area 6-1.

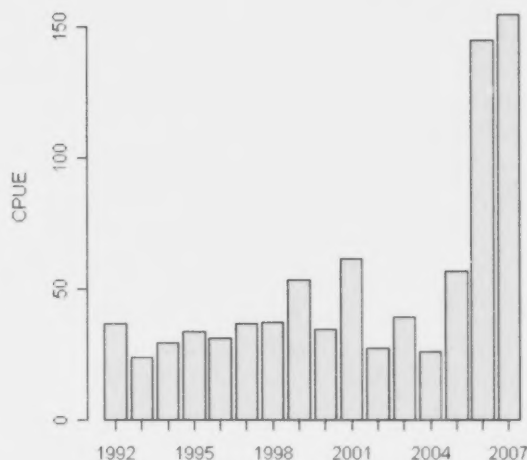


Figure 46. Walleye gill net CPUE (kg/km) for management area 6-1.

Harvest of walleye from QMA 6-1 was up for the second year in a row, comparable to levels observed in the early 1990s (Fig. 45). In all, 83.1% of the quota was harvested in 2007. Targeted gill net fishing effort also increased in 2007 (15.8%), but is still well below levels seen in the 1990s.

CPUE of walleye increased again in 2007 and remains at an all time high (Fig. 46). As in 2006, the CPUE reported was two to three times higher than any previous year back to 1979. However, most of the increase in CPUE is attributable to extremely effective fishing events in a couple of grids along the north shore rather than a broad scale increase in CPUE across the entire North Channel.

The harvest in 2007 was dominated by the 2003 year class (four year old fish). There was also a good representation of both the 2004 and 2005 year classes, but fish older than six years of age were absent from the catch. The mean age of the catch (3.82 years) increased slightly from 2006, but is still lower than the mean age observed throughout most of the 1990s. During that time, the catch was typically composed of six to 11 different age classes and the mean age typically ranged from 4.8 to 7.0 years.

Catch curve mortality estimates from the 2007 data suggest that the total annual mortality is substantially higher than the target value used by the UGLMU for walleye and is noticeably higher than the estimates observed over the previous decade. During that time, annual mortality estimates typically ranged from 20-60% per year. However, an inflated mortality estimate from within year catch curves is not unusual when a very strong year class dominates the catch.

Summary and Recommendation

Although the CPUE of walleye is up noticeably in both 2006 and 2007, the spatial pattern of CPUE does not indicate a broad scale increase of abundance across the North Channel. Furthermore, the age distribution of the catch indicates that this increase in relative abundance is due almost entirely to a single strong year class. The age structure is not consistent with a strong, resilient walleye population, the type of age distribution observed in the North Channel during the 1990s.

RECOMMENDATION: **No Change**

Yellow Perch - Overall

The abundance of yellow perch is up in both the North Channel and Main basin. Harvest was up in southern Lake Huron but harvest continues to be down in QMA 6-1. The low harvest in the North Channel is likely due to the absence of targeted fishing rather than a broad scale indicator of yellow perch abundance. While the harvest of yellow perch in QMA 4-5 is up from those reported between 2003 and 2005 the harvest is still lower than that reported throughout the 1980s and early 1990s when harvest regularly exceeded 200 000 kg per year.

Although there have been reports of yellow perch populations recovering throughout the lake (as the 2003 year class recruits to commercial and assessment gear), the abundance of yellow perch outside of the North Channel and southern Main basin continues to be extremely low relative to historical levels. In fact, there has been virtually no commercial harvest of yellow perch in any part of Georgian Bay since the early 1990s.

The increased harvest of yellow perch in QMA 4-5 is a direct reflection of the strength of the 2003 year class. The strength of this year class has been well documented in index gear since 2004. Unfortunately, there is little evidence of subsequent year classes, and as a result, abundance is expected to decline in the near future.

Yellow Perch QMA 4-5

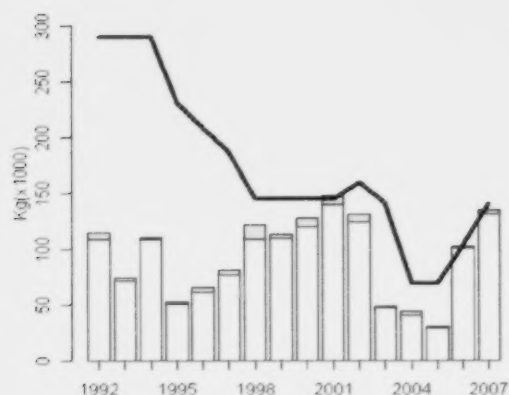


Figure 47. Yellow perch quota (line) and harvest (bars) from management area 4-5.

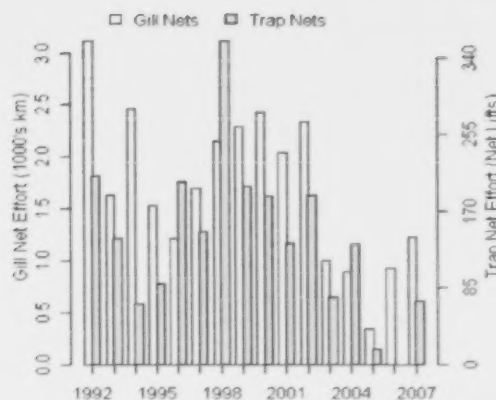


Figure 48. Yellow perch effort for gill nets and trap nets for management area 4-5.

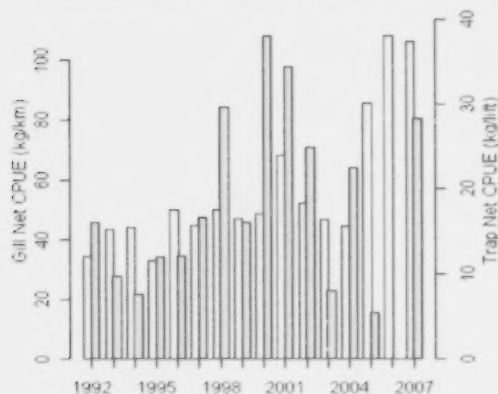


Figure 49. Yellow perch gill net CPUE (kg/km) and trap net CPUE (kg/lift) for management area 4-5.

The harvest of yellow perch increased again in 2007 to levels that are comparable to those reported between 1998 and 2002 (Fig. 47). The gill net fishery continues to harvest the bulk of the yellow perch in this QMA (97%). On a zone wide basis, 96% of the allocated quota was harvested (Fig. 48).

The CPUE of yellow perch in targeted gill net effort in 2007 was unchanged from 2006 and remained considerably higher than values over the past 20 years (Fig. 49). The CPUE for the small amount of targeted trap net effort conducted in 2007 was also among the highest seen over the past two decades.

The age distribution of yellow perch sampled from the commercial gill net catch was dominated by four and five year old fish (the 2002 and 2003 year classes) (Fig. 51). However, fish older than five years of age are still relatively rare in this part of the lake (less than 2% of the observed catch). A small number of two and three year old fish were observed.

The dominance of one or two extremely young age classes and the absence of older individuals resulted in very high catch curve mortality estimates for both 2006 and 2007 ($A > 80\%$ /year). Annual mortality estimates between 2003 and 2005 ranged from 61-67%, values that are still fairly high, but not unusual for yellow perch populations (Henderson and Nepszy, 1989).

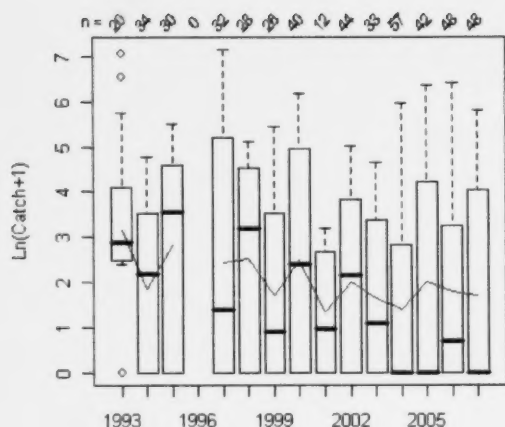


Figure 50. Box-whisker plot of the catch of yellow perch in the OMNR's southern Lake Huron offshore assessment program 1993-2007. The solid line indicates the mean catch.

The dominance of the 2003 year class is not unexpected. The OMNR's offshore index assessment program has documented the strength of this year class over the past couple of fishing seasons (Fig.50), as has Michigan Department of Natural Resources surveys in U.S. waters. The 2003 year class continued to appear in index catches in 2007 as four year olds. Additionally, the 2004 and 2005 year classes have also been observed in this program and the presence of these year classes is promising.

The overall mean (and median) CPUE for yellow perch in the southern Lake Huron index program continues to be lower than the period between 1993 and 2000 (Fig 50) suggesting that yellow perch abundance is not as high as it was a decade ago.

Summary and Recommendation

CPUE of yellow perch in southern Lake Huron is at an all time high as the 2003 year class continues to support the commercial fishery. While older fish tend to be rare, there is some evidence that the year classes following the 2003 cohort may be reasonably strong.

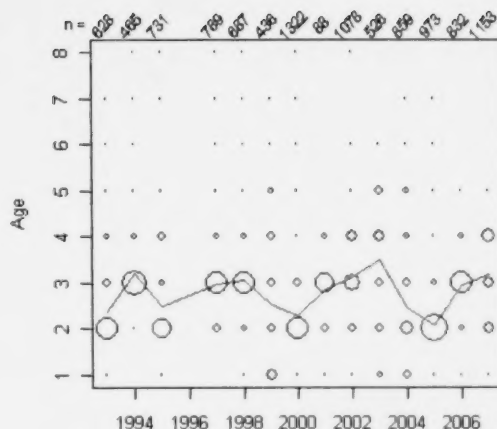


Figure 51. Bubble plot of the age distribution of yellow perch caught in the OMNR's southern Lake Huron offshore assessment program 1993-2007. The size of each bubble is proportional to the contribution of that age to the catch in that year. The solid line indicates the mean age of the catch.

Yellow Perch QMA 6-1

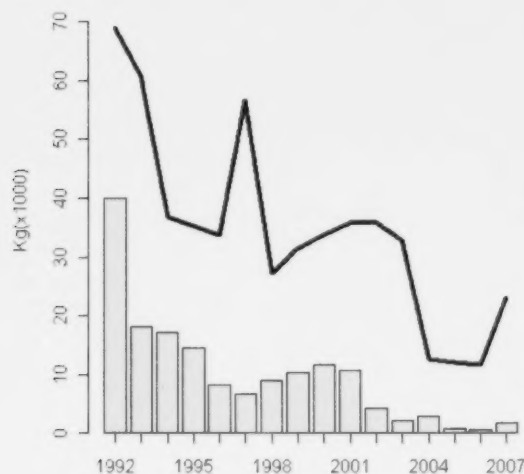


Figure 52. Yellow perch quota (line) and harvest (bars) from management area 6-1.

Harvest of yellow perch in QMA 6-1 increased 63% in 2007 (Fig. 52). However, it remains low relative to harvests seen prior to 2002. The harvest since 2002 is the lowest harvest observed in this QMA in the past 27 years. Only 7.6% of the allocated quota was harvested in 2007.

The main reason for the reduced harvest is reduced fishing effort. In 2007, fishing effort targeted at yellow perch, (76.3 km of gill net), was less than 10% of that seen in at its highest point in 1991.

CPUE declined 38% in 2007 although it is difficult to interpret this change given the extremely low fishing effort (Fig. 53). Despite the low harvest and effort, the CPUE is just slightly below the average CPUE seen between 2002 and 2005. It appears as though the low harvest of yellow perch is a consequence of low targeted effort rather than low abundance.

Low effort may be attributable to number of factors including by-catch of non-target species (especially young walleye and lake herring), the low number of license holders in the QMA, the establishment of a small exclusion zone on the north shore, and the reluctance of fishermen to move to other areas.

The catch ranged in age from two to eight years in 2007. Although five year old fish (the 2002 year class) were the most common, ages four to six were

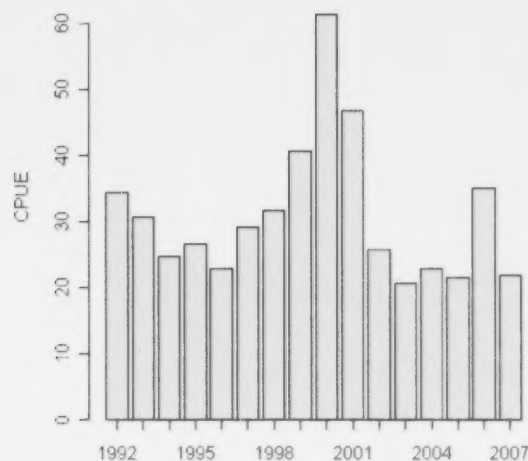


Figure 53. Yellow perch gill net CPUE (kg/km for management area 6-1.

well represented (Fig. 54). The mean age increased in 2007, and is now similar to that seen in the early 1990s.

Catch curve mortality estimates have typically been extremely high in this QMA over the past decade (>64%/year). However, the mortality estimates for both 2006 and 2007 are lower ($A=52.6\%/year$ and $60.7\%/year$). High total mortality is not uncommon in yellow perch populations (Henderson and Nepszy 1989).

CPUE of yellow perch in the OMNR's offshore index program the North Channel was high in 2007 and was noticeably higher than the 2002 to 2004 period. Like the age composition of the commercial catch, the 2002 year class (five year olds in 2007) has been well represented in index catches for the past several years (Fig. 55). Younger year classes were also well represented in the 2007 index program, especially fish from the 2005 year class; the PRI value for 2005 year class is currently more than four times higher than the long term average.

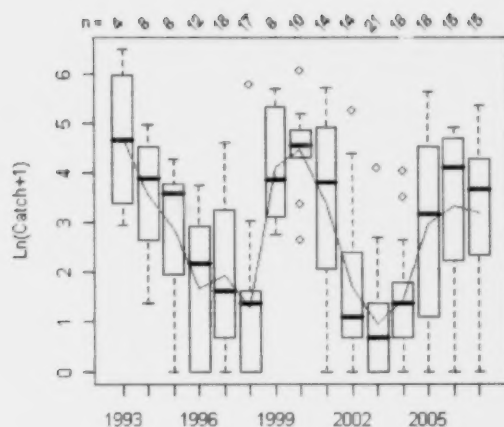


Figure 54. Box-whisker plot of the catch of yellow perch in the OMNR's North Channel offshore assessment program 1993-2007. The solid line indicates the mean catch.

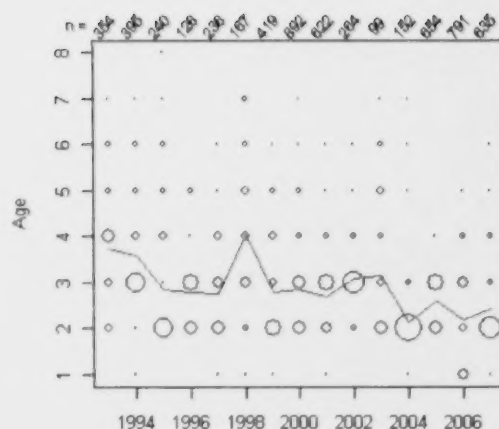


Figure 55. Bubble plot of the age distribution of yellow perch caught in the OMNR's North Channel offshore assessment program 1993-2007. The size of each bubble is proportional to the contribution of that age to the catch in that year. The solid line indicates the mean age of the catch.

Summary and Recommendation

The drop in the harvest of yellow perch in QMA 6-1 is more likely associated with changes in the dynamics of the fishing fleet and its spatial patterns than to changes in yellow perch abundance. More than 90% of the allocated yellow perch quota was left unfished in 2007. A strong year class has recruited to the fishery and strong subsequent year classes are expected in the near future.

RECOMMENDATION: **No Change**

Lake Trout - Overall

Harvest of lake trout was similar to that reported in 2006. The majority of the harvest continues to come from the Main basin (72%) even though recruitment (stocking) is almost equal in the main basin and Georgian Bay. Fishing effort is much lower in Georgian Bay accounting for the lower harvests. Harvest in the Main basin peaked in 2004 and has declined slightly since. Peaks in harvests are highly variable in the rest of the lake.

The age distribution of lake trout in the commercial catch was dominated by five to seven year old fish. Each year there appear to be older fish in the catch suggesting increasing survival of larger, older fish. This is particularly true in the main basin. Conversely, the mean age of lake trout in the North Channel catch continues to be at least a year younger than the rest of the lake. Age four and five fish dominate the catch in that area.

Independent index netting throughout the lake suggest that older lake trout are common in locations where large mesh gill net fishing is not practiced or effort is low.

Overall, abundance of lake trout continues to increase in Lake Huron. Young fish are less abundant but there are more indications of natural reproduction than ever before, especially in the main basin.

The new lake trout quotas implemented in Lake Huron were intended to balance the objectives of lake trout rehabilitation and the incidental catch of lake trout in lake whitefish targeted gill net efforts. These quotas appear to be limiting lake trout harvest in only a few areas and some changes are likely necessary. QMA's 4-4 and 4-7, still do not have production lake trout quotas in place. Work needs to continue to bring these QMA's up to date.

Lake Trout QMA 4-1

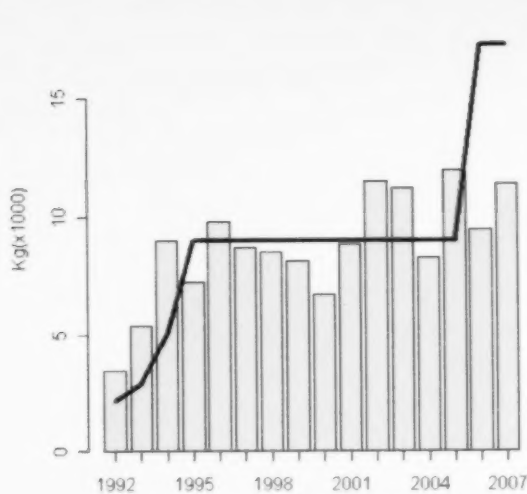


Figure 56. Lake trout quota (line) and harvest (bars) from management area 4-1.

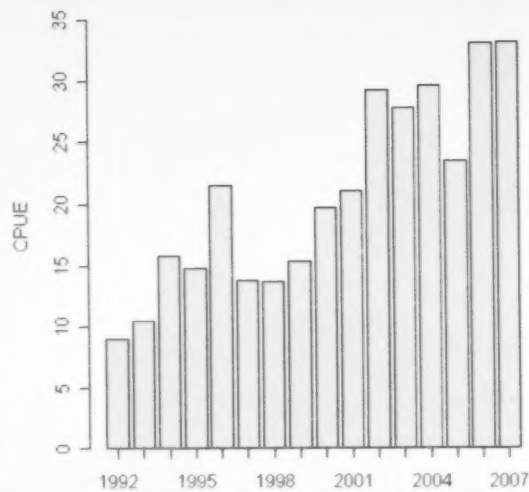


Figure 57. Lake trout gill net CPUE (kg/km) for management area 4-1.

Harvest of lake trout increased in this QMA 4-1 in 2007 and was similar to the relatively high values reported over the past five or six years (Fig. 56). CPUE of lake trout in lake whitefish targeted gill net effort did not change from 2006 and remains high relative to previous years (Fig. 57). The incidental catch of lake trout in lake whitefish targeted effort remained high (35.2%) in 2007 increasing slightly from 2006. On a zone wide basis, only 66.1% of the allocated lake trout quota was harvested from this QMA.

No catch sampling for lake trout occurred in this QMA in 2007. As a consequence, mortality estimates and characteristics of the age distribution of the catch are not available.

SCAA models that combine data from QMA 4-1 and Michigan assessment area MH-1 suggest that abundance and biomass of lake trout increased slightly in 2007, but that the spawning biomass has declined. The decline in spawning biomass could have resulted from a change in maturity rates (i.e. fish are maturing at older ages) or increased recruitment of young fish that have not yet reached spawning age.

Total annual mortality (37.1%) estimated from the SCAA model for age 6+ fish (2005-2007 average, SCAA) is below the threshold limit of 40% used by

the UGLMU for the management of rehabilitating lake trout populations.

No lake trout have been stocked by OMNR in this QMA or the western end of the North Channel. Most of the lake trout harvested in this QMA come from the United States Fish and Wildlife Service (USFWS) stocking in the Northern Refuge, located to the south of Drummond Island. It is expected that the continued stocking in the Northern Refuge will result in relatively high incidental catch of lake trout in this QMA for the foreseeable future.

Summary and Recommendation

The limited lake whitefish targeted effort in this QMA resulted in low lake trout harvest in 2007. Despite the limited harvest, mortality is close to threshold and should not be increased. Given that lake trout are not stocked in the Canadian waters of this QMA and there is little or no evidence of natural recruitment, exploitation of lake trout in this QMA needs to be limited and closely monitored in the future.

RECOMMENDATION: **No Change**

Lake Trout QMA 4-2

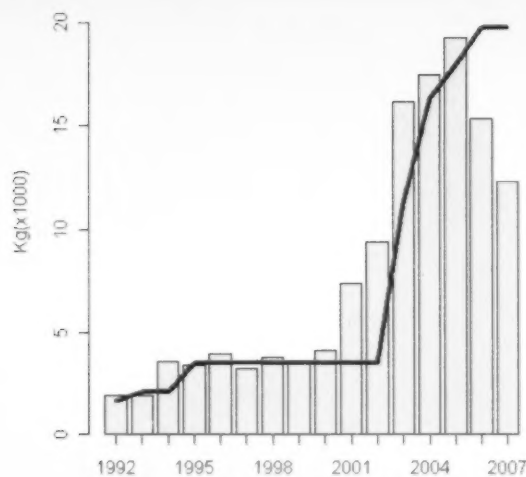


Figure 58. Lake trout quota (line) and harvest (bars) from management area 4-2.

Harvest of lake trout in QMA 4-2 was down from 2006, but was still substantially higher than the harvest levels reported prior to 2002 (Fig. 58). All of the harvest in 2007 was from gill net gear. On a zone wide basis, 62.5% of the issued quota was harvested. This is only the second time in ten years that the lake trout quota was not exceeded in this QMA.

Like harvest, CPUE of lake trout in lake whitefish targeted effort continues to be relatively high (Fig. 59). The CPUE reported for 2007 was lower than in the previous four years, but was still higher than anything prior to 2002. The incidental catch rate of lake trout in lake whitefish targeted effort (12.0%) declined in 2007 and is now below the lake wide average (15.9%). The change in the reported ICR rate may reflect changes in the fishery, either spatially or temporally, changes in the activity levels of various license holders, or changes in lake trout abundance. On a zone wide basis, the incidental catch rate of lake trout in whitefish targeted effort is buffered by the trap net fishery.

SCAA modeling based on data from QMAs 4-2, 4-3, 4-7 and Michigan assessment area MH-2 suggest that the abundance of lake trout in this part of the lake increased in 2007, while biomass (total and spawning stock) decreased. Total annual mortality (A) for fish age six and older (2005-2007 average)

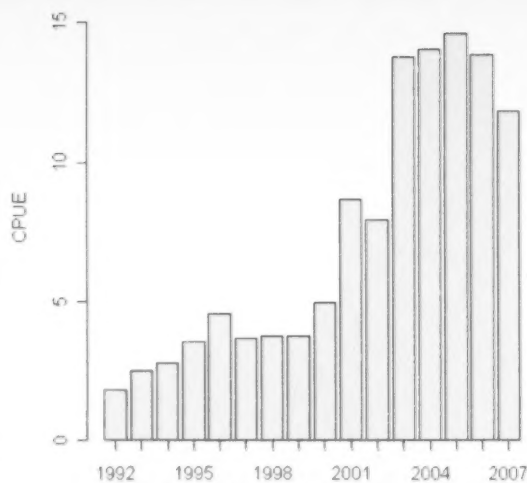


Figure 59. Lake trout gill net CPUE (kg/km) for management area 4-2.

was estimated to be 35.3%, below the upper threshold (40%) used by UGLMU for the management of rehabilitating lake trout populations.

A small sample of fish from onboard catch sampling indicated a slight increase in the number of age classes in the catch in 2006, with five and eight year old fish being the most common. The mean age of the catch increased to 6.6 years, up slightly from recent years. The mean age of lake trout in the catch from this QMA has typically fluctuated between 4.5 and 5.5 years since the early 1990s.

No lake trout have been stocked by OMNR in this QMA, however an average of 143 000 yearling lake trout have been stocked in neighbouring QMA 4-3 since 1996. These lake trout, along with lake trout stocked by the USFWS in the Northern Refuge and offshore reefs are often harvested in this QMA.

Summary and Recommendation

Harvest of lake trout continues to be noticeably higher in this QMA than anytime prior to 2002. Declines in the past two years do not appear to be directly correlated with changes in lake whitefish targeted effort. SCAA models suggest that biomass has increased in recent years while the age distribution of the catch is relatively broad. On a zone wide basis, the harvest of lake trout is buffered in this QMA by the presence of the trap net fishery. However, the total harvest for the QMAs 4-2, 4-3, and 4-7 combined exceeds the maximum allowable harvest estimated from the SCAA model, suggesting that mortality (harvest) in these QMAs should be monitored closely in the future.

RECOMMENDATION: **No Change**

Lake Trout QMA 4-3

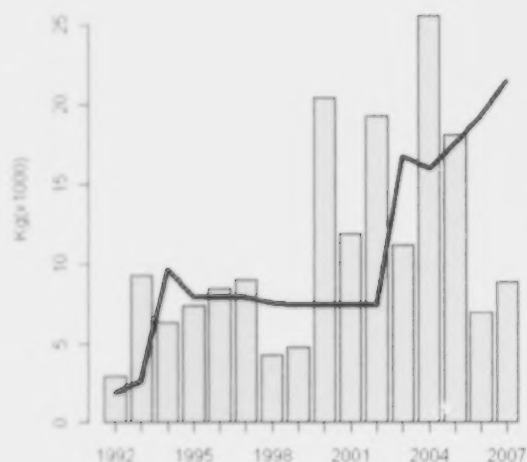


Figure 60. Lake trout quota (line) and harvest (bars) from management area 4-3.

Harvest of lake trout in both 2006 and 2007 has declined noticeably in this QMA (Fig. 60). This decline is at least partly due to declining lake whitefish targeted effort. On a zone wide basis, 41.2% of the allocated lake trout quota was harvested. Similarly, only 30% of the lake whitefish quota was harvested from this QMA.

The CPUE of lake trout in lake whitefish targeted effort declined from 2006 and is similar to the 1999 to 2003 period (Fig. 61). The ICR of lake trout in this QMA has remained quite high (22.8%) relative to other areas around the lake, but is below the peak ICR of 28.6% that occurred in this QMA in 2003. There is a noticeable difference in the ICR reported by different participants in the fishery in this QMA. At least part of the difference in ICR may be explained by differences in the spatial or temporal patterns of fishing.

Unfortunately, no lake trout samples were collected from onboard catch sampling in 2007 precluding a discussion of the age distribution of the catch or the calculation of catch curve mortality estimates.

SCAA models that combine data from QMA 4-2, 4-3, 4-7 and Michigan assessment area MH-2 suggest that the abundance of lake trout in this part of Lake Huron increased in 2007, although biomass (total and spawning stock) decreased slightly. Total

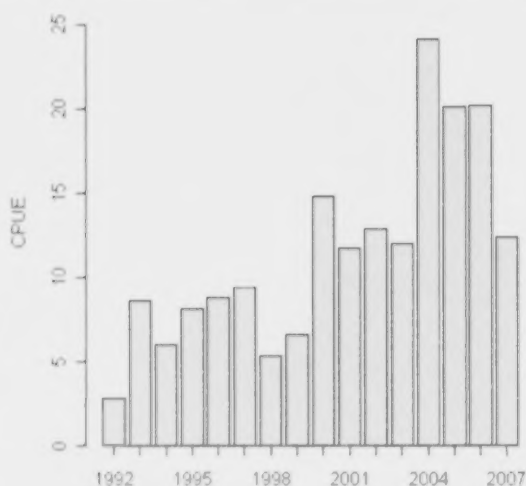


Figure 61. Lake trout gill net CPUE (kg/km) for management area 4-3.

Annual mortality (A) for fish age six and older was estimated to be 34.7%, just below the target threshold (40%).

Projection of the SCAA results suggest that the current quota in this QMA is very close to the maximum harvest levels that would still allow the establishment of a sufficiently large spawning stock. Additionally, if the ICR remains high, it is unlikely the lake whitefish quota will be achieved before all of the available lake trout quota has been harvested.

With the exception of 1980, some part of this QMA has been stocked annually with pure strain lake trout since 1977. Between 1996 and 2006, an average of 143 000 lake trout were stocked annually in this QMA. Most of this stocking is associated with the Bruce Archipelago LTRZ, but stocking events in the Northern Refuge, Six Fathom Bank and South Bay are also likely to influence catches in this QMA. Continued stocking will result in relatively high incidental catch of lake trout in this QMA for the foreseeable future.

Summary and Recommendation

Declining lake trout harvest is consistent with declining harvest of lake whitefish in this QMA. Estimates of total mortality are currently compatible with lake trout rehabilitation objectives, but the incidental catch of lake trout in lake whitefish targeted efforts continues to be excessive. Given current lake trout quota and ICR, it is likely that the lake trout quota will be achieved before the available lake whitefish quota has been harvested.

RECOMMENDATION: **No Change**

Lake Trout QMA 4-4

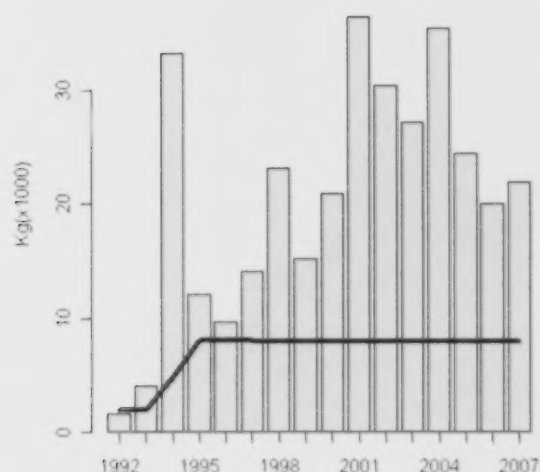


Figure 62. Lake trout quota (line) and harvest (bars) from management area 4-4.

The harvest of lake trout in QMA 4-4 was up slightly in 2007 but was still substantially lower than the peak that occurred in 2001 (Fig. 62). The incidental catch of lake trout in lake whitefish targeted effort (11.7%) is slowly increasing in this QMA, but continues to be lower than many other parts of the lake.

Unfortunately, no age structures were available from the lake trout harvest in this QMA, precluding discussion of the age distribution of the catch or the calculation of catch curve mortality estimates in recent years.

SCAA modeling based on data from QMAs 4-4 and 4-5 and Michigan assessment area MH-345 combined, suggests that abundance and biomass of lake trout in the southern half of the main basin has been declining since 2001. The projection model which incorporate the results of the SCAA model and applies a target mortality rate suggest that the current harvest levels in the southern half of the main basin exceed the estimated limit.

The OMNR's offshore index assessment data indicates that the abundance of lake trout has been increasing over the last five to ten years, at least in the vicinity of Southampton (Fig. 63). The increasing abundance (i.e. mean CPUE in

standardized index gear) is a combination of continued recruitment of younger age classes and more importantly, the persistence of older fish in the catch (Fig. 64).

The proportion of unclipped, and potentially wild lake trout observed in the catch of the offshore index program in this QMA continues to increase. In 2007, 26.2% of all lake trout captured at this site were unclipped and were presumed to be wild.

Lake trout are stocked in the southern half of this QMA in association with the Point Clark LTRZ (LTRZ 11). Fish stocked in the Bruce Archipelago by the MNR and several offshore reefs by US agencies frequently appear in the catch in this QMA as well. In 2007, just over 256 000 lake trout were stocked in this QMA.

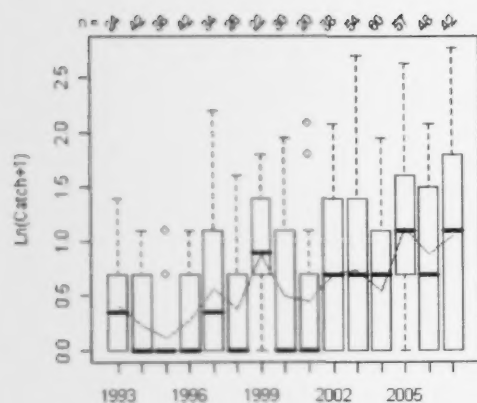


Figure 63. Box-whisker plot of the catch of lake trout in the OMNR's central Lake Huron offshore assessment program 1993-2007. The solid line indicates the mean catch.

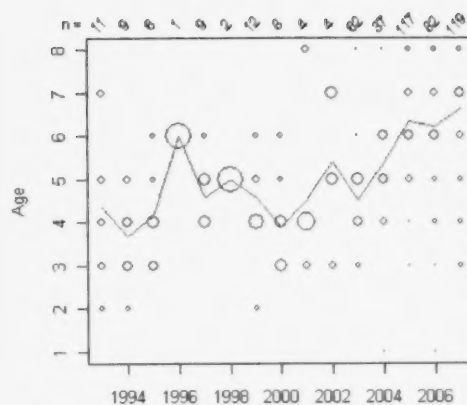


Figure 64. Bubble plot of the age distribution of lake trout caught in the OMNR's central Lake Huron offshore assessment program 1993-2007. The size of each bubble is proportional to the contribution of that age to the catch in that year. The solid line indicates the mean age of the catch.

Summary and Recommendation

Production quota has yet to be implemented in this QMA, but it is clear that the current level of harvest in this QMA is higher than desired. This is especially true in light of the number of unclipped fish being observed in recent years. If harvest increases in this QMA, rehabilitation efforts are likely to be impeded.

Recommendation : **No Change**

Lake Trout QMA 4-5

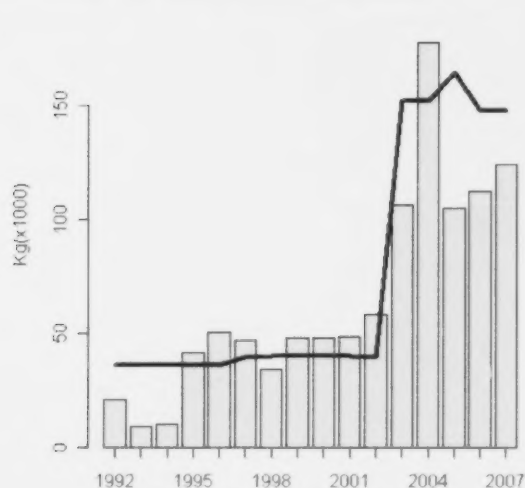


Figure 65. Lake trout quota (line) and harvest (bars) from management area 4-5.

Harvest of lake trout in QMA 4-5 was up slightly again in 2007, but was well below the peak harvest level reported in 2004 (Fig. 65). On a zone wide basis, 83.8% of the issued lake trout quota was harvested in 2007, the majority (95%) from the gill net fishery.

The CPUE of lake trout in lake whitefish targeted gill net effort was down in both 2006 and 2007, but is still double that reported prior to 2001 (Fig. 66). The incidental catch rate of lake trout in lake whitefish targeted effort increased in 2007 to the second highest rate on record (16.1%) for this QMA and was slightly higher than the lake wide average for 2007.

The onboard catch sampling program indicated that the catch ranged in age from five to 12 years of age, with six and seven year old fish being the most common. The mean age of the catch was up slightly in 2007 (7.0 years) the highest it has ever been. This may be a result of poor survival of recently stocked fish or the continued presence of older individuals in the population.

The OMNR's offshore assessment data suggest that the abundance of lake trout has been stable in recent years (Fig. 67) but below the peaks that occurred in 2001 and 2003. The number of age

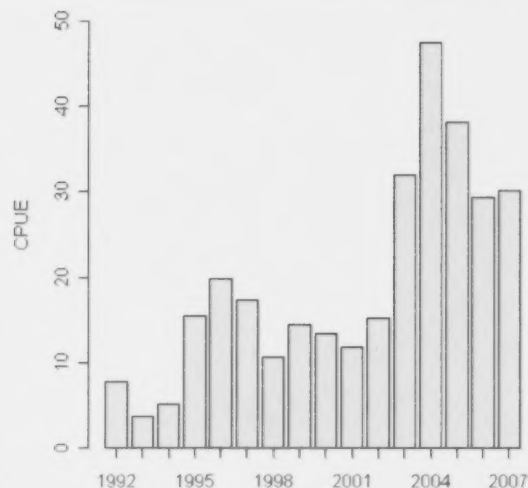


Figure 66. Lake trout gill net CPUE (kg/km) for management area 4-5.

classes and mean age of the catch from the index program has been generally increasing over the past five to ten years (Fig. 68).

SCAA modeling based on data from QMA's 4-4 and 4-5 and Michigan assessment area MH-345 combined, suggests that abundance and biomass of lake trout in the southern half of the main basin has been declining since 2001. Projection models which incorporate the results of the SCAA models and apply target mortality rates suggest that current harvest levels exceed lake trout rehabilitation thresholds.

Until 2007, there was little evidence of natural reproduction by lake trout in this QMA. The percentage of unclipped lake trout in the index program catch typically fluctuated between three and seven percent per year. In 2007, the percent of unclipped lake trout jumped to 18.2% (12 of 66 fish) and is consistent with reports of increasing prevalence of unclipped lake trout throughout the lake.

Stocking of lake trout in this QMA is limited to the northern most grids and is associated with the Point Clark LTRZ. A large part of the catch also comes from stocking activities on the US side of the boarder. Lake trout stocking at Point Clark has been occurring since 1992 and between 1997 and

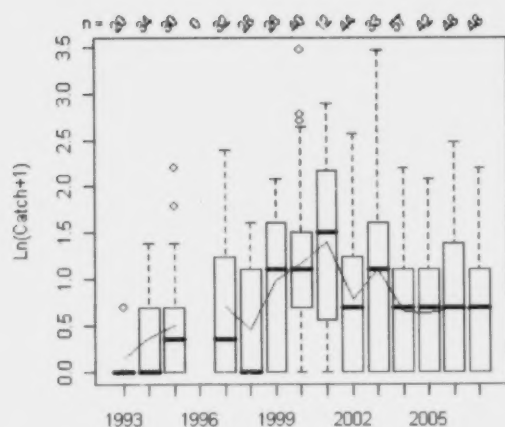


Figure 67. Box-whisker plot of the catch of lake trout in the OMNR's southern Lake Huron offshore assessment program 1993-2007. The solid line indicates the mean catch.

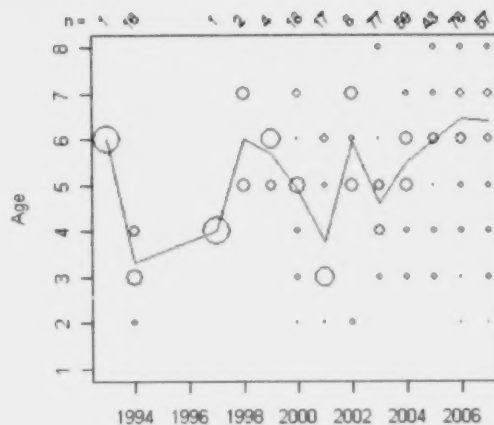


Figure 68. Bubble plot of the age distribution of lake trout caught in the OMNR's southern Lake Huron offshore assessment program 1993-2007. The size of each bubble is proportional to the contribution of that age to the catch in that year. The solid line indicates the mean age of the catch.

2007, an average of 260 000 lake trout have been stocked annually into the waters in and around this LTRZ.

Summary and Recommendation

Lake trout appear to be declining in this QMA, at least partially due to high harvest and poor survival of recently stocked fish. Lake trout quota is not limiting the harvest of other commercially important species at this time and the presence of unclipped fish suggest at least some natural reproduction is occurring in southern Lake Huron.

RECOMMENDATION: -10%

Lake Trout QMA 4-7

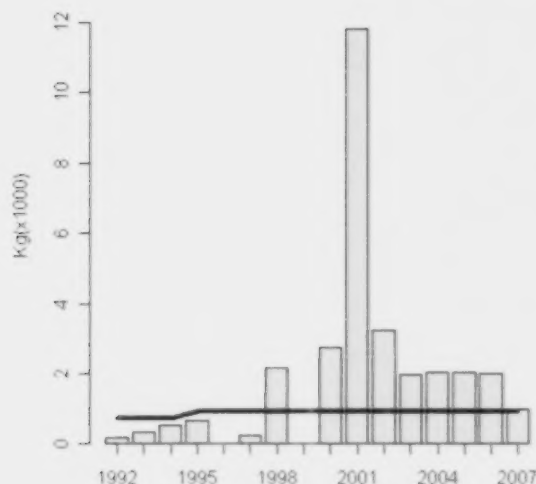


Figure 69. Lake trout quota (line) and harvest (bars) from management area 4-7.

The reported harvest of lake trout from QMA 4-7 was down in 2007 (Fig. 69). Although this QMA sees very little fishing effort, the incidental catch of lake trout in lake whitefish targeted effort is relatively high (41.2% in 2007).

CPUE of lake trout in this QMA is generally high, although the amount of effort expended in this QMA has been inconsistent in recent years making it difficult to interpret trends in relative abundance.

No lake trout age structures have been collected from this QMA over the past several years, precluding a discussion about the age distribution of the catch or the calculation of catch curve mortality estimates.

A SCAA model that combines data from QMA 4-2, 4-3, 4-7 and Michigan assessment area MH-2 suggests that the abundance of lake trout in this part of Lake Huron increased in 2007, although biomass (total and spawning stock) decreased slightly. Total annual mortality (A) for fish age six and older was estimated to be 34.7%, just below the lake trout rehabilitation threshold mortality rate (40%).

Projection of the SCAA results suggest that the combined harvest of lake trout from this part of the lake is very close to the maximum harvest levels

that would still allow the establishment of a sufficiently large spawning stock.

Part of LTRZ 13 (the Bruce Archipelago) lies in the north east corner of this QMA. Stocking in this LTRZ has continued since 1988, and between 1997 and 2007, an average of 275 000 lake trout were stocked annually in this LTRZ. Other stocking events, most notably stocking activity on offshore reefs are also likely to influence catches in this QMA.

Summary and Recommendation

The combined harvest from this part of the lake continues to exceed the maximum harvest levels that are consistent with lake trout rehabilitation. However, the projection model for the combined SCAA suggests that biomass has actually increased slightly over the past few years and total annual mortality is below the upper threshold.

Production quotas for lake trout have not been implemented in this QMA. It is recommended that production quotas that balance lake trout rehabilitation objectives with the requirements of the existing commercial fishery be considered.

RECOMMENDATION: **No Change**

Lake Trout QMA 5-1

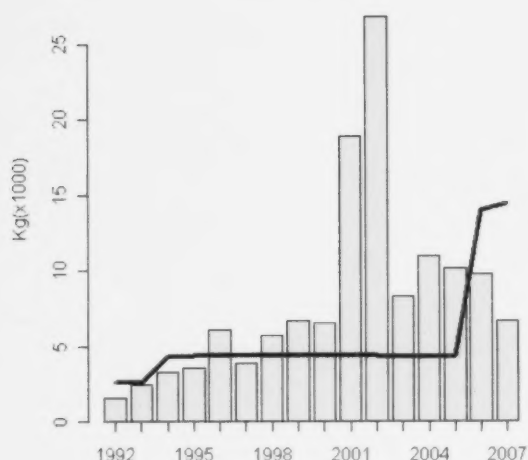


Figure 70. Lake trout quota (line) and harvest (bars) from management area 5-1.

The harvest of lake trout in QMA 5-1 was down slightly from 2006 and was substantially lower than the peak harvest that occurred in 2001 and 2002 (Fig. 70). In fact, the harvest reported in 2007 was among the lowest harvest levels from this QMA over the past decade. On a zone-wide basis, 46% of the issued quota was harvested.

The CPUE of lake trout in lake whitefish targeted gill nets was down again in 2007 and is now comparable to the CPUE estimates observed prior to 2000 (Fig. 71). Similarly, the incidental catch rates (both observed and reported) in lake whitefish targeted gill net efforts are down in 2007 relative to previous years. The lower ICR suggests that either the abundance of lake trout in this QMA is low relative to other QMAs or that the fishery has been able to target lake whitefish when they were spatially segregated from lake trout.

The age distribution of the catch in 2007 consisted of seven different age classes from three to 11 years. Four and seven year old lake trout were particularly well represented in the catch. The mean age of lake trout in this QMA (5.82 years) has been relatively unchanged in the past three years.

The catch curve mortality estimate for lake trout from this QMA was 25.1%, considerably lower

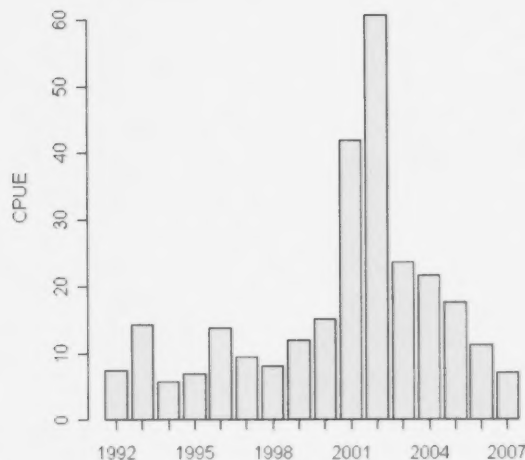


Figure 71. Lake trout gill net CPUE (kg/km) for management area 5-1.

than previous years and well below the upper threshold mortality rate for lake trout (40%).

Stocking of lake trout in this QMA has been sporadic over the past several years. Most of the stocking in this QMA is in association with LTRZs on Grand Bank (to the south) and in Fraser Bay (to the west). Movement of these fish into QMA 5-1 appears to be widespread. No fish were stocked within this QMA in 2007.

Summary and Recommendation

Harvest of lake trout in QMA 5-1 was down in 2007. The age distribution of the catch is broad and the mean age has stabilized. Total annual mortality does not appear to be excessive.

RECOMMENDATION: **No Change**

Lake Trout QMA 5-2

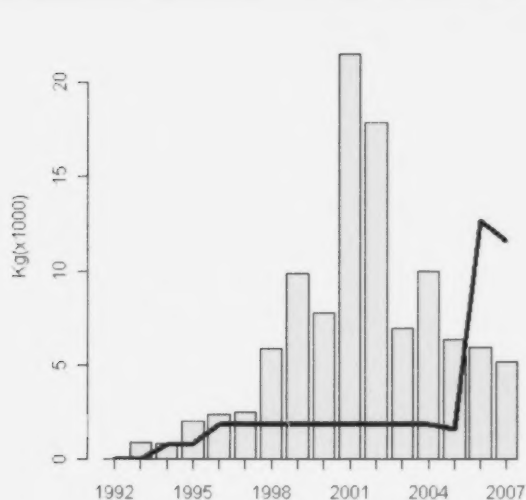


Figure 72. Lake trout quota (line) and harvest (bars) from management area 5-2.

Harvest of lake trout in QMA 5-2 in 2007 was down slightly relative to 2006, and is substantially lower than the peak harvest that occurred in 2001 and 2002 (Fig. 72). In fact, the harvest in 2007 is the lowest observed since 1998. On a zone wide basis, 44.6% of the issued quota was harvested.

The CPUE of lake trout caught in lake whitefish targeted gill nets declined in 2007, to a level similar to the late 1990s (Fig. 73). The reported incidental catch rate of lake trout in lake whitefish targeted nets in this QMA continues to be among the highest on the lake (23.6%), however, it did decline in 2007.

There were no lake trout sampled from the commercial catch from this QMA in 2007. Catch curve estimates generated from previous year's data suggested that total mortality has been close to the upper threshold used by the UGLMU management for exploited lake trout populations.

There is no active lake trout rehabilitation zone in this QMA and there is currently no lake trout stocking in or near the QMA.

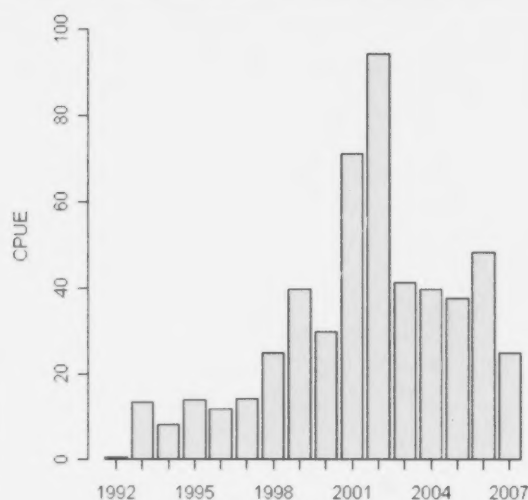


Figure 73. Lake trout gill net CPUE (kg/km) for management area 5-2.

Summary and Recommendation

Harvest and abundance estimates of lake trout in QMA 5-2 continue to decline. Incidental catch of lake trout continues to be high but has declined over the past five years.

RECOMMENDATION: -10%

Lake Trout QMA 5-3

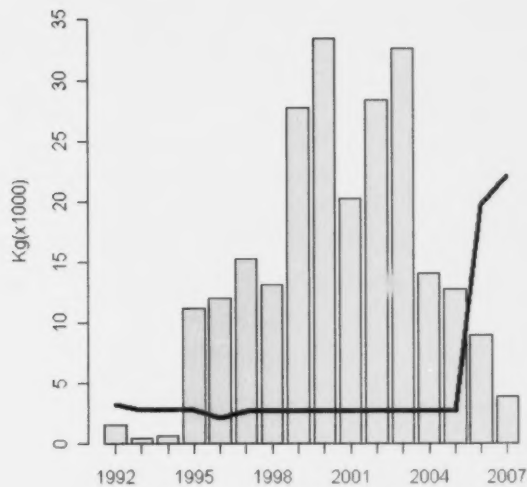


Figure 74. Lake trout quota (line) and harvest (bars) from management area 5-3.

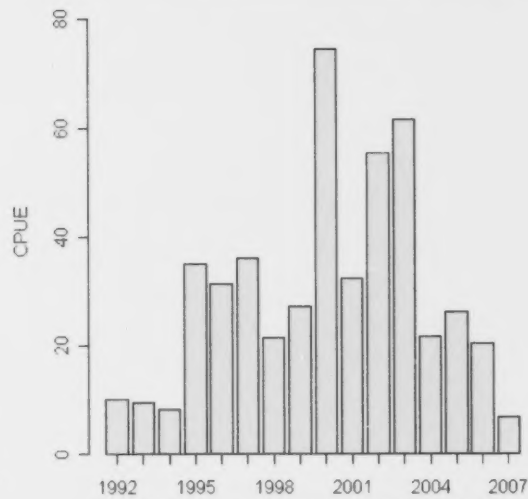


Figure 75. Lake trout gill net CPUE (kg/km) for management area 5-3.

Harvest of lake trout was down for the fourth consecutive year in QMA 5-3, and is the lowest harvest reported since 1994. On a zone wide basis, 18% of the issued quota was harvested.

Similarly, the zone wide CPUE for lake trout in lake whitefish targeted efforts declined to the lowest observed since 1992. The drop in CPUE is particularly apparent when compared to the peak values that were reported between 2000 and 2003.

The incidental catch of lake trout in lake whitefish targeted efforts in this QMA declined in 2007 (10.5%), and continues to be one of the lowest on the lake.

Unfortunately, no catch samples were collected in 2007, precluding an examination of the age structure or estimation of total mortality through catch curve analysis.

QMA 5-3 contains two lake trout rehabilitation zones, Grand Bank (LTRZ 4) and the Bruce Archipelago (LTRZ 13). Both are stocked annually. Stocking of lake trout in this QMA between 1996 and 2006 averaged slightly over 560 000 lake trout per year

Summary and Recommendation

Harvest of lake trout in QMA 5-3 continues to decline while whitefish harvest remains stable. Declining CPUE and ICR would suggest that the abundance of lake trout in this QMA has dropped in recent years and that current harvest rates are too high.

RECOMMENDATION: **-10%**

Lake Trout QMA 5-6

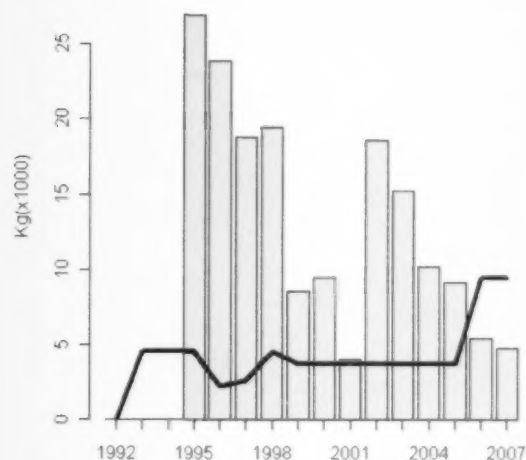


Figure 76. Lake trout quota (line) and harvest (bars) from management area 5-6.

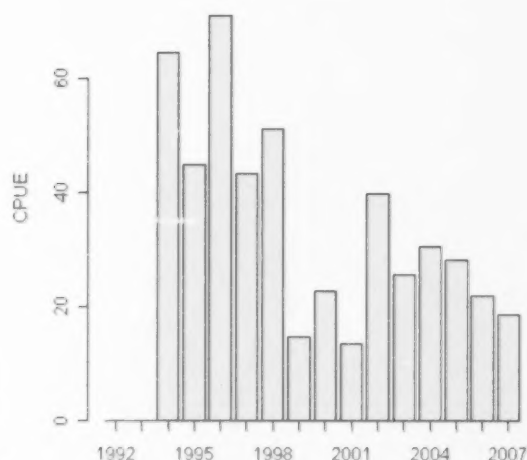


Figure 77. Lake trout gill net CPUE (kg/km) for management area 5-6.

Harvest of lake trout in QMA 5-6 was down for the fifth year in a row, and is the second lowest harvest level reported since 1994 (Fig. 76). On a zone wide basis, just over 50% of the issued quota was harvested.

Similarly, the CPUE of lake trout in lake whitefish targeted gill nets continues to decline and is noticeably lower than the peak CPUE values that occurred between 1994 and 1998 (Fig. 77). However, the incidental catch rate of lake trout in lake whitefish targeted effort increased in 2007 (61%) and is currently the second highest value in the lake.

There is no stocking of lake trout in this QMA. However, this QMA contains part LTRZ 10 which is actively stocked. Between 1996 and 2006, an average of 200 000 lake trout were stocked in LTRZ 10.

Summary and Recommendation

All of the available indicators suggest that the abundance of lake trout has dropped in recent years in QMA 5-6. Harvest, CPUE and ICR all continue to decline. Additionally, the catch of lake trout in the southern Georgian Bay index program has declined noticeably in recent years. As such, recruitment to the commercial fishery in Georgian Bay is uncertain. Given the available information, it is unlikely that current exploitation levels will continue to be consistent with lake trout rehabilitation objectives.

RECOMMENDATION: -10%

Lake Trout QMA 5-7

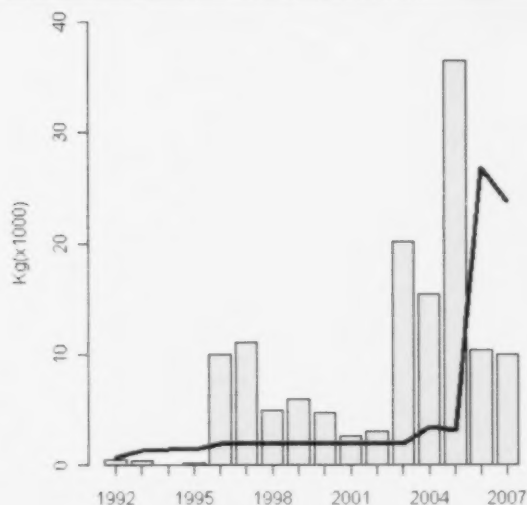


Figure 78. Lake trout quota (line) and harvest (bars) from management area 5-7.

Harvest of lake trout in QMA 5-7 in 2007 declined slightly from 2006 (Fig. 78). On a zone wide basis, 41.9% of the issued quota was harvested while an additional 30% of the reported catch of lake trout was released. A large part of the fishery in this QMA is currently inactive, and as such, a sizable amount of lake trout quota is essentially dormant.

CPUE of lake trout in lake whitefish targeted effort was down again in 2007, to the lowest it has been in five years (Fig. 79). However it still remains one of the highest values in Lake Huron. The incidental catch of lake trout in lake whitefish targeted effort increased in 2007 and remains the highest in all of Lake Huron at 65%. The trends in CPUE, ICR, and to a lesser extent harvest, are influenced by the pulse stocking that is occurring in the vicinity of the Watcher Islands (LTRZ 8) located in the north central portion of this QMA.

The age distribution of lake trout sampled from the commercial catch in QMA 5-7 was comprised of seven different age classes in 2007. Six and seven year old fish were particularly represented. The mean age of the catch increased in 2007 (7.35) and is currently higher than any time in the last two decades.

Catch curve total annual mortality estimates from fish sampled in the catch over the last three years

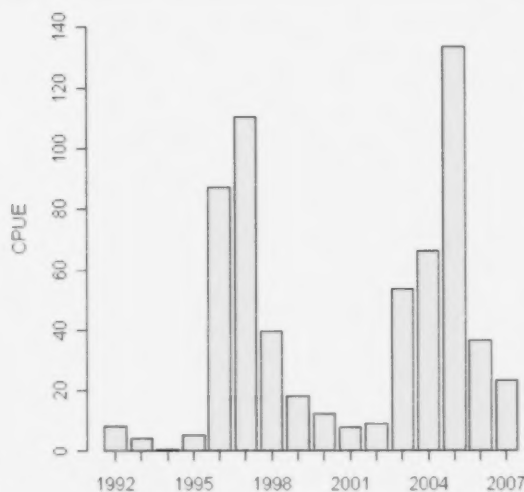


Figure 79. Lake trout gill net CPUE (kg/km) for management area 5-7.

have ranged from 42% to 70%, well in excess of the maximum mortality threshold used by the UGLMU for QMAs with rehabilitating lake trout populations. In 2007 mortality dropped to 42.5%, largely due to the continued presence of older fish in the catch.

Stocking in LTRZ 8 follows a cyclical pattern of three years of heavy stocking (approximately 240 000 yearling lake trout per year) followed by a three year stocking hiatus. This results in periods with high incidental catch rates for lake trout when stocked fish are within the size range that is vulnerable to commercial fishing gear, typically between five and seven years of age in this part of Georgian Bay.

Summary and Recommendation

While harvest was relatively low in 2007, this is largely due to the large proportion of the catch that was reported as released. The ICR indicates that abundance is high, and past stocking activities suggest that abundance will likely remain high in 2008 as year classes continue to recruit to the fishery. Total annual mortality continues to be at or above the upper mortality threshold for rehabilitating lake trout populations.

RECOMMENDATION: **No Change**

Lake Trout QMA 5-8

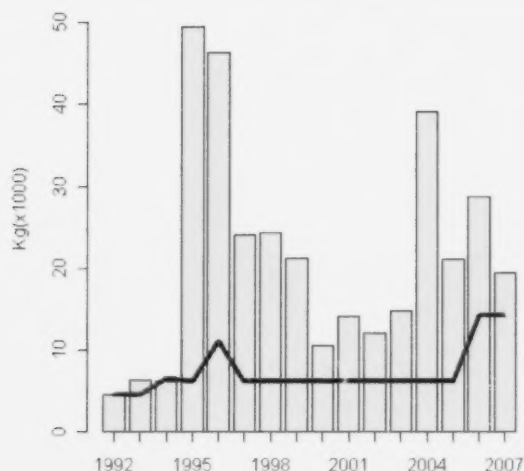


Figure 80. Lake trout quota (line) and harvest (bars) from management area 5-8.

Harvest of lake trout in QMA 5-8 was down in 2007 and has varied widely over the past five years (Fig. 80). Total harvest is still well below the peak levels that were observed in 1995 and 1996. Quota was revised in all of Georgian Bay in 2006 to balance current harvest rates and lake trout rehabilitation objectives. Despite the increase in lake trout quota, 136.8% of the quota issued in 2007 was harvested by the fishery in QMA 5-8.

The reported CPUE from lake whitefish targeted effort declined in 2007 and is at its lowest level on record (Fig. 81). The incidental catch of lake trout in lake whitefish targeted effort, while still very high relative to the rest of the lake, continues to drop.

Unfortunately, catch-at-age data have not been available for several years, precluding a discussion of the age structure of the catch or calculation of total annual mortality rates.

Lake trout relative abundance in this QMA has been monitored by the UGMLU offshore index assessment program (Fig. 82). The fishery independent survey conducted in this QMA has shown a steady decline in the catch of lake trout, starting as far back as 1993, but is most pronounced in the past several years.

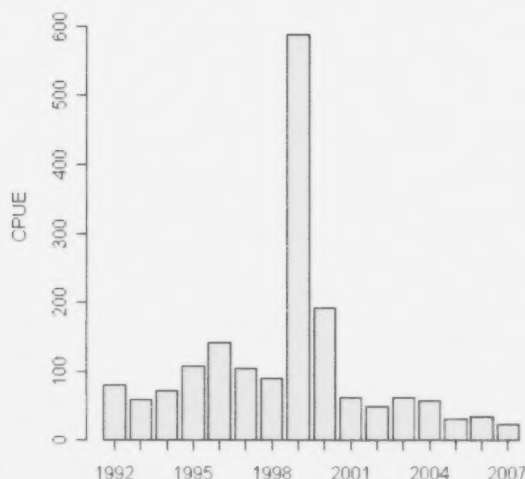


Figure 81. Lake trout gill net CPUE (kg/km) for management area 5-8.

Stocking of lake trout continues in this QMA, associated with LTRZs 9 and 10 (Nottawasaga Bay and western Georgian Bay, respectively). Pure strain lake trout have been stocked in this QMA since 1986. Between 1996 and 2006, an average of 330 000 lake trout were stocked annually in this QMA. Since the 2002 year class, recruitment of these stocked lake trout to assessment gear has been very weak (Fig. 82), suggesting that recruitment to the commercial fishery is also likely to decline in the upcoming years (Fig. 83).

Summary and Recommendation

Harvest of lake trout in QMA 5-8 has varied over the past four years but is still high relative to the early 1990s. CPUE from both the commercial data and from the independent index data suggest that abundance has been declining for some time and continues to decline, even with continued stocking. Additionally, the chronically truncated age distribution observed in the index program suggests that adult mortality is excessive.

RECOMMENDATION: -20%

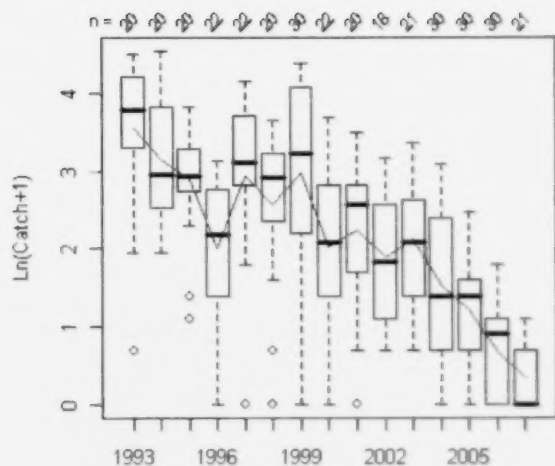


Figure 82. Box-whisker plot of the catch of lake trout in the OMNR's southern Georgian Bay offshore assessment program 1993-2007. The solid line indicates the mean catch.

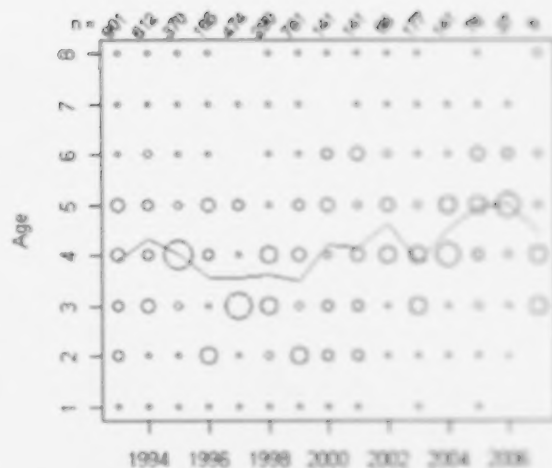


Figure 83. Bubble plot of the age distribution of lake trout caught in the OMNR's southern Georgian Bay offshore assessment program 1993-2007. The size of each bubble is proportional to the contribution of that age to the catch in that year. The solid line indicates the mean age of the catch.

Lake Trout QMA 5-9

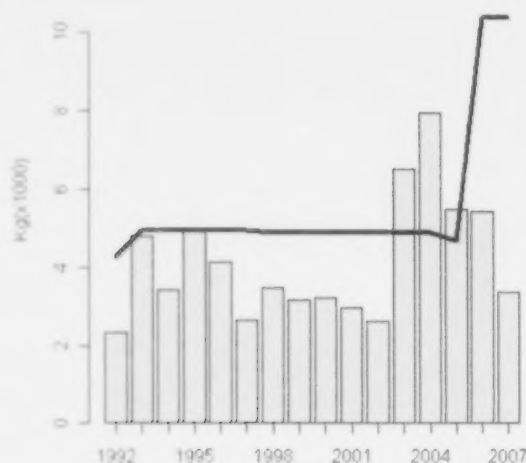


Figure 84. Lake trout quota (line) and harvest (bars) from management area 5-9.

Harvest of lake trout in QMA 5-9 declined in 2007 (Fig. 84). However, lake whitefish targeted fishing effort also declined which likely accounts for some of the drop in lake trout harvest. Harvest was noticeably higher between 2003 and 2006.

The CPUE of lake trout in lake whitefish targeted effort is down for the third year in a row, and was the second lowest value seen in the past 15 years (Fig. 85). The incidental catch of lake trout in lake whitefish targeted effort is quite low in this QMA relative to the rest of the lake (4.9%) and declined again in 2007, for the third year in a row. Both of these parameters suggest a decline in lake trout abundance.

The age distribution of the catch increased from four age classes in 2006 to six in 2007. Fish between five and seven years of age continue to form the bulk of the catch. Despite the low number of age classes in the catch, the mean age has been steadily and consistently increasing. Since 2003, the mean age has risen from 4.22 to 6.03.

Catch curve mortality estimates based on the observed age distribution suggest that total mortality of lake trout in this QMA (45.1%), above the upper threshold used for QMAs that contain one or more LTRZs (40%).

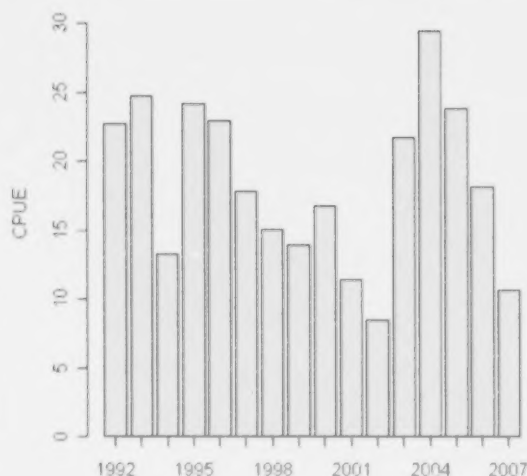


Figure 85. Lake trout gill net CPUE (kg/km) for management area 5-9.

Stocking of lake trout continues in the vicinity of this QMA, associated with LTRZ 9 (Nottawasaga Bay). The first stocking of pure strain lake trout in this LTRZ occurred in 1996. Between 1996 and 2006, an average of almost 95 000 lake trout have been stocked annually in QMA 5-9. There is no evidence of recruitment of year classes after 2002 in this QMA, suggesting that like QMA 5-8, the strength of subsequent year classes may be low.

Summary and Recommendation

Overall, it appears as though lake trout in this QMA are currently stressed. Some of the decline in lake trout harvest in 2007 is likely related to the reduced fishing effort in this QMA. However, declining CPUE and ICR as well as a high mortality rate are consistent with a declining lake trout population. Furthermore, fishery independent data from Cape Rich also suggests that there has been a dramatic reduction in the abundance of lake trout in southern Georgian Bay.

RECOMMENDATION: -10%

Lake Trout QMA 6-1

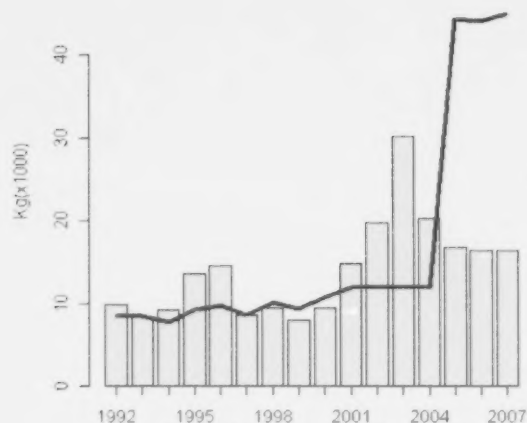


Figure 86. Lake trout quota (line) and harvest (bars) from management area 6-1.

Harvest of lake trout from QMA 6-1 has been relatively unchanged since 2005 (Fig. 86). It is just slightly over half of the harvest reported in 2003 (30 171 kg), the peak year for lake trout harvest in this QMA. Only 36.7% of the allocated quota in this QMA was harvested in 2007. However, only 49.4% of the lake whitefish quota was harvested in 2007, which has direct implications to lake trout catch.

The CPUE of lake trout in lake whitefish targeted nets was the same as in 2006 and is down from the peak seen in 2002 and 2003 (Fig. 87). The ICR of lake trout in lake whitefish efforts was up slightly in 2007 (9.7%) but still lower than the previous five year average. The ICR in this QMA continues to be below the lake wide average.

Onboard catch sampling showed that the catch of lake trout in QMA 6-1 was comprised of fish from three to ten years of age, although three and four year old fish were the most common. The mean age was down slightly in 2007 but still similar to the previous four-year average. The mean age of lake trout in the commercial catch in this QMA is fairly low (4.95 years) relative to other parts of the lake where the mean age is typically between six and seven years of age.

The total annual mortality estimate ($A=25.6\%$) continues to be well below the threshold used by the UGLMU for rehabilitating lake trout

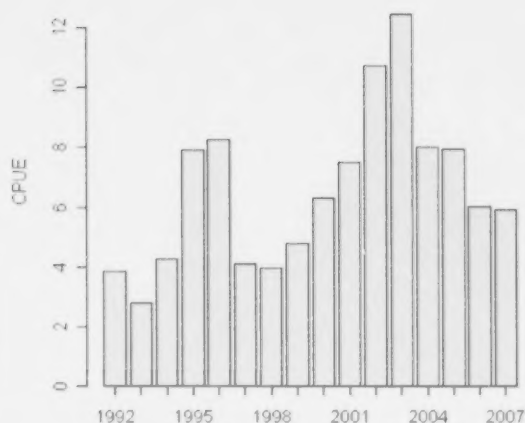


Figure 87. Lake trout gill net CPUE (kg/km) for management area 6-1.

populations (<40%).

Cohort modeling based on stocking data and mortality rates from the northern main basin suggests that the abundance of lake trout is expected to increase slightly over the next few years. Spawning stock biomass is also expected to increase as year classes mature.

Stocking of lake trout continues in the North Channel. QMA 6-1 contains, or is adjacent to two LTRZs. All lake trout stocking in QMA 6-1 is currently associated with LTRZ 2 (eastern North Channel). Between 1996 and 2006, an average of almost 190 000 lake trout were stocked annually into the waters of the North Channel, mostly in the vicinity of Gore Bay. In 2007, approximately 206 000 lake trout were stocked in this QMA. It is expected that these fish will continue to recruit to the commercial and recreational fisheries for the next several years.

Summary and Recommendation

Commercial harvest of lake trout has been stable for the past three years in QMA 6-1. The under-utilization of the quota is attributable to inactive fisheries in this area. Total annual mortality is currently consistent with lake trout rehabilitation objectives.

RECOMMENDATION: **No Change**

Lake Trout QMA 6-3

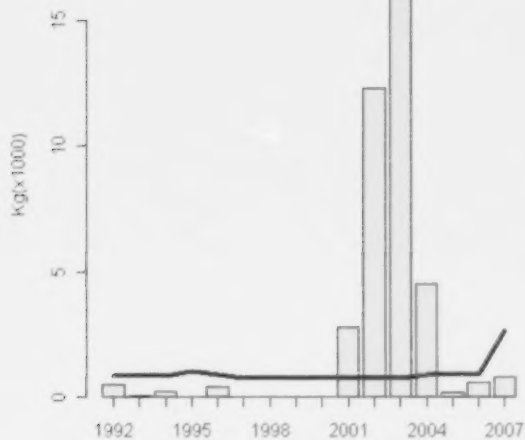


Figure 88. Lake trout quota (line) and harvest (bars) from management area 6-3.

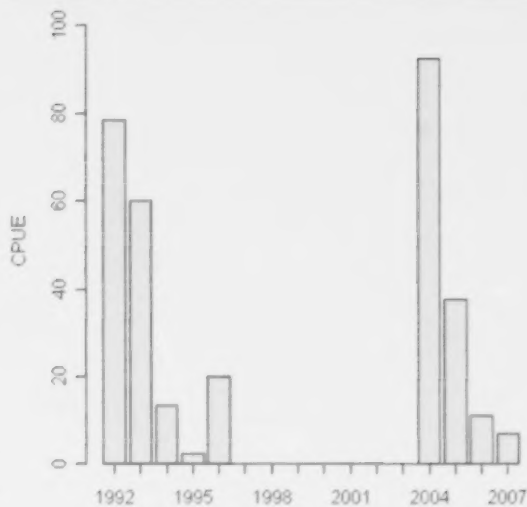


Figure 89. Lake trout gill net CPUE (kg/km) for management area 6-3.

The harvest of lake trout in QMA 6-3 was up slightly in 2007, but is well below the peak harvest that occurred in 2002 and 2003 (Fig. 88). On a zone wide basis, only 31.3% of the issued lake trout quota was harvested in 2007.

The reported CPUE of lake trout in lake whitefish targeted effort continues to decline since the peak in 2004 (Fig. 89). The incidental catch rate of lake trout in lake whitefish targeted effort in 2007 increased slightly (19.9), and is now slightly above the lake wide average.

Unfortunately, there were no samples collected from the commercial harvest of lake trout in QMA 6-3, precluding a discussion about the age distribution of the catch or the calculation of catch curve mortality estimates.

This QMA is in close proximity to a number of LTRZs including Heywood Island (LTRZ 3) and Iroquois Bay (LTRZ 5). Stocking in QMA 6-3 has occurred almost continuously since the 1970s. Between 1996 and 2006, an average of 135 000 yearling lake trout were stocked annually in QMA 6-3. In 2007, just over 161 000 lake trout were stocked in this QMA (including Iroquois Bay).

Summary and Recommendation

Production quota for lake trout was allocated to QMA 6-3 for the first time in 2007. While harvest increased, quota did not limit the harvest of lake trout or any other species. Given recent stocking activities, abundance of lake trout is expected to increase in this QMA in the future. Effort should be made to collect biological samples.

RECOMMENDATION: **No Change**

Lake Herring - Overall

2007 was the second year for lake herring quotas in Lake Huron. Although quotas were implemented throughout all three basins of the lake, 93% of the harvest came from the North Channel.

Implementation of quotas for lake herring does not appear to have impeded the commercial fisheries targeting lake whitefish, yellow perch or walleye. One or two fisheries in QMA 6-1 approached their lake herring quotas, but abundant unused quota was still available on other licences in the QMA. In addition, in 2007 a temporary pool of unused lake herring quota was made available to commercial fishermen on a limited basis to address the issue of high incidental catch events with individual fishers. As with any other quota managed species, the onus is on individual license holders to manage their quota judiciously and fish when and where the incidental catch of non-target species can be minimized.

Index netting suggests that the absence of lake herring reported from some parts of the lake reflects a lack of commercial activity rather than an indication of lake herring abundance. This is particularly true along the eastern shore of Georgian Bay where lake herring are frequently encountered in large numbers in assessment netting programs.

Lake herring appear to be relatively abundant in the North Channel and eastern Georgian Bay with multiple age classes observed in independent fishing activity. As a native coregonid, lake herring are an important part of the Lake Huron fish community. The re-establishment of healthy lake herring populations throughout Lake Huron is an important consideration for the rehabilitation of Lake Huron's fisheries. They are likely to be a key prey species in the recovery or rehabilitation of indigenous top predators such as lake trout and walleye.

Lake Herring QMA 5-7

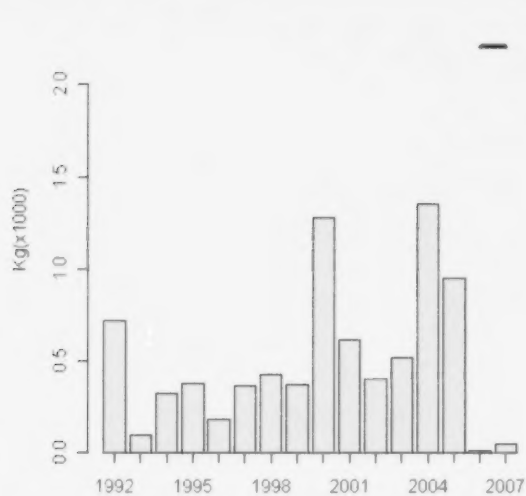


Figure 90. Lake herring quota (line) and harvest (bars) from management area 5-7.

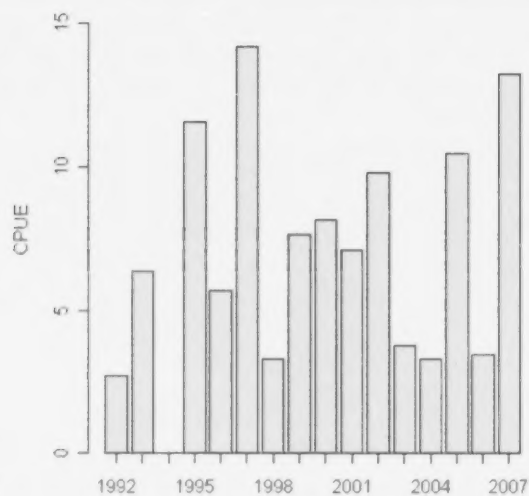


Figure 91. Lake herring gill net CPUE (kg/km) in lake whitefish targeted effort for management area 5-7.

Harvest of lake herring QMA 5-7 was low again in 2007, noticeably lower than the harvest levels reported prior to 2006 (Fig. 90). Only 2.4% of the issued quota was harvested in 2007.

CPUE of lake herring in lake whitefish targeted effort is highly variable, but increased in 2007 (Fig. 91).

There were no biological samples collected from the commercial harvest of lake herring in QMA 5-7 in 2007.

Summary and Recommendation

Harvest of lake herring in QMA 5-7 remained very low in 2007. Quotas were introduced in 2006 and require critical evaluation. Current quotas appear to be much higher than required to cover the incidental catch of lake herring in this QMA.

RECOMMENDATION: **-10%**

Lake Herring QMA 6-1

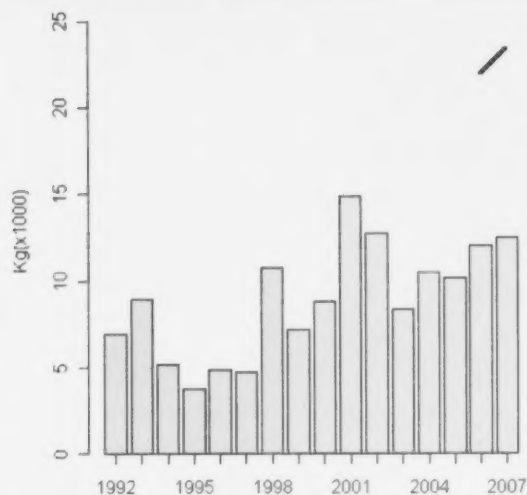


Figure 92. Lake herring quota (line) and harvest (bars) from management area 6-1.

The harvest of lake herring in QMA 6-1 was up slightly in 2007 and has been increasing steadily over the past four years (Fig. 92). Lake whitefish harvest on the other hand has been declining over the same period of time. Although a couple of fisheries approached their lake herring quota, most of the individual fisheries in QMA 6-1 were well below their allocation. Overall, 53% of the zone wide quota was harvested.

The CPUE of lake herring in lake whitefish targeted gill net effort was very close to the long term average from 1991 to 2006 and is well below the peak reported in 2000 and 2001 (Fig. 93).

No commercial catch samples for lake herring were collected in 2007, precluding a discussion about the age distribution of the catch or estimation of total annual mortality rates.

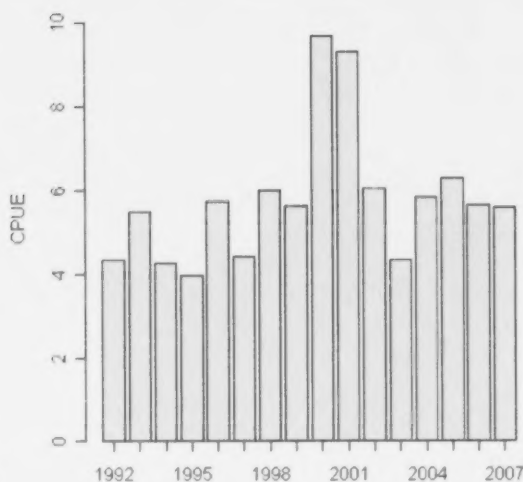


Figure 93. Lake herring gill net CPUE (kg/km) in lake whitefish targeted effort for management area 6-1.

Summary and Recommendation

Harvest of lake herring has generally been increasing since the mid 1990s. There appears to be major differences in incidental catch rates between individual fishers and areas fished in this QMA. Current lake herring quotas are unlikely to be impeding fisheries targeting walleye, lake whitefish, or yellow perch on a QMA basis.

RECOMMENDATION: **No Change.**

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**Appendix A – Stock Evaluation Protocol Forms
for Lake Whitefish in Lake Huron for 2007**

QMA: 4-1	Status of Stock				
Parameter	<div>← lower<div>Risk</div>higher →</div>				
	Health/Sustainability <div>higherlower</div>				
CPUE	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Commercial Harvest					
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	>=0.6	>=0.7	>=0.8	>=0.9	>=1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F:M	<0.5	<0.8	< 1.0	>1	>1.5
SPR	>0.45	>0.35	>0.20	<0.20	<0.15
2008 - 3 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (>67% and <150%)	Lower than Average (>33% and <67%)	Very Low (<33%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

Notes: Using the 4-1, 4-2, 4-3 combined SCAA, it appears that biomass and recruitment peaked in 2004 and has dropped off ever since. Estimated exploitable biomass continues to be well above current harvest levels.

QMA: 4-2	Status of Stock				
Parameter	<div>← lower<div>Risk</div>higher →</div> <div>Health/Sustainability</div> <div>lower</div>				
CPUE Commercial Harvest	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	≥0.6	≥0.7	≥0.8	≥0.9	≥1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F:M	<0.5	<0.8	< 1.0	>1.0	>1.5
SPR	>0.45	>0.35	>0.20	<0.20	<0.15
2008 - 3 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (>67% and <150%)	Lower than Average (>33% and <67%)	Very Low (<33%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

Notes: Spawning stock biomass is still relatively high, but total biomass is declining and has been for at least 3 to 5 years. It appears that recruitment is very low. The harvested population is comprised of just age 6 to 10 fish. This continues to be a concern.

QMA: 4-3	Status of Stock				
Parameter	<div><div>← lower</div><div>Risk</div><div>higher →</div><div>Health/Sustainability</div><div>lower</div></div>				
CPUE Commercial Harvest	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	>=0.6	>=0.7	>=0.8	>=0.9	>=1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F:M	<0.5	<0.8	< 1.0	>1.0	>1.5
SPR	>0.45	>0.35	>0.20	<0.20	<0.15
2008 - 3 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (>67% and <150%)	Lower than Average (>33% and <67%)	Very Low (<33%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

Notes: Size at age is a concern for older fish as the mean weight of older fish continues to decline. This is not true for younger fish (age 6 and younger). Exploitable biomass appears to be increasing although this may be short lived if recruitment continues to be low. Low harvests continue to skew the EBH ratio. Infrequent effort also results in few sampling trips and limited biological information.

QMA: 4-4	Status of Stock				
Parameter	<div><div>← lower</div><div>Risk</div><div>higher →</div></div> <div>Health/Sustainability</div> <div>lower</div>				
CPUE Commercial Harvest	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	>=0.6	>=0.7	>=0.8	>=0.9	>=1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F:M	<0.5	<0.8	< 1.0	>1.0	>1.5
SPR	>0.45	>0.35	>0.20	<0.20	<0.15
2008 - 3 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (>67% and <150%)	Lower than Average (>33% and <67%)	Very Low (<33%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

Notes: No age structures available from the commercial catch for 2007 at time of analysis. Harvest is very low relative to quota. Quota is currently 13% of estimated exploitable biomass which is within an UGLMU acceptable range.

QMA: 4-5	Status of Stock				
Parameter	<div>← lower higher Risk Health/Sustainability higher → lower</div>				
CPUE Commercial Harvest	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	≥0.6	≥0.7	≥0.8	≥0.9	≥1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	≥0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	≥50%
	<20%	20% to 30%	30% to 40%	40% to 50%	≥50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	≥0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F:M	<0.5	<0.8	< 1.0	>1.0	>1.5
SPR	>0.45	>0.35	>0.20	<0.20	<0.15
2008 - 3 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (>67% and <150%)	Lower than Average (>33% and <67%)	Very Low (<33%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	≥50%
	<20%	20% to 30%	30% to 40%	40% to 50%	≥50%

Notes: SCAA utilized time varying catchability this year for the first time. Very little trap net effort was deployed in 2007 so most of the information is from the gill net fishery.

QMA: 4-7		Status of Stock			
Parameter		Risk			
		← lower higher	Health/Sustainability		higher ← lower
CPUE		Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years
Commercial Harvest		Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years
Predicted Recruitment from Independent Index		3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted
Age Structure of Catch		Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch		Major Positive Change	Minor Positive Change	No Change	Minor Negative Change
Size at Age		Major Positive Change	Minor Positive Change	No Change	Minor Negative Change
Age Mature : Mean Age		>0.6	>0.7	>0.8	>0.9
COHORT ANALYSIS					
Total Annual Mortality		<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70
Estimated Exploitable Biomass		Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008		<20%	20% to 30%	30% to 40%	40% to 50%
		<20%	20% to 30%	30% to 40%	40% to 50%
SCAA					
Total Annual Mortality		<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70
Estimated Exploitable Biomass		Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years
SSB		Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years
Ratio of F:M		<0.5	<0.8	<1.0	<1.0
SPR		>0.45	<0.15	<0.20	<0.20
2008 - 3 yr Old Recruitment		Very High (>200%)	Higher than Average (>150% and <200%)	Average (<4% and <150%)	Lower than Average (<10% and <4%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008		<20%	20% to 30%	30% to 40%	40% to 50%
		<20%	20% to 30%	30% to 40%	40% to 50%

Notes: No age structures from the commercial catch available at time of analysis. QMA 4-4 and 4-7 are pooled for SCAA. Therefore results are reported in both SEP's for SCAA. Cohort analysis assumes age distribution in 2007 similar to that in 2005 and 2006. Harvest is extremely low in this QMA, making independent analysis difficult.

QMA: 5-1	Status of Stock				
Parameter	<div>← lower higher</div> <div>Risk</div> <div>Health/Sustainability</div> <div>← higher lower</div>				
CPUE	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Commercial Harvest					
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	≥0.6	≥0.7	≥0.8	≥0.9	≥1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	≥0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007-2008	<20%	20% to 30%	30% to 40%	40% to 50%	≥50%
	<20%	20% to 30%	30% to 40%	40% to 50%	≥50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	≥0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F:M	<0.5	<0.8	<1.0	<1.0	<1.5
SPR	<0.45	<0.35	<0.20	<0.20	<0.15
2008 - 3 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (<67% and <150%)	Lower than Average (<33% and <67%)	Very Low (<33%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	≥50%
	<20%	20% to 30%	30% to 40%	40% to 50%	≥50%

Notes: No SCAA. Harvest < 12 year class.

QMA: 5-2	Status of Stock				
Parameter	<div><div>← lower</div><div>Risk</div><div>higher →</div><div>Health/Sustainability</div><div>lower</div></div>				
CPUE Commercial Harvest	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	≥0.6	≥0.7	≥0.8	≥0.9	≥1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F/M	<0.5	<0.6	<1.0	>1.0	>1.5
SPR	<0.45	<0.35	<0.20	<0.20	<0.15
2008 + 5 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (<60% and <150%)	Lower than Average (<30% and <60%)	Very Low (<30%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

Notes:

QMA: 5-3	Status of Stock				
Parameter	<div>← lower higher</div> <div>Risk</div> <div>Health/Sustainability</div> <div>higher lower</div>				
CPUE	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Commercial Harvest					
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	≥0.6	≥0.7	≥0.8	≥0.9	≥1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SAB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F:M	<0.5	<0.6	<1.0	<1.8	<1.5
SPE	<0.45	<0.55	<0.70	<0.70	<0.75
2008 - 3 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (<90% and <150%)	Lower than Average (<10% and <90%)	Very Low (<10%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

Notes: Only one commercial catch sample in 2007.

QMA: 5-6	Status of Stock				
Parameter	<div>← lower<div>Risk</div>higher →</div> <div>Health/Sustainability</div> <div>higher</div> <div>lower</div>				
CPUE	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Commercial Harvest					
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	≥0.6	≥0.7	≥0.8	≥0.9	≥1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
%EB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of E : M	<0.5	<0.8	<1.0	>1.0	>1.5
%EB	<0.45	<0.35	<0.20	<0.20	<0.15
2008 - 3 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (>67% and <150%)	Lower than Average (<33% and <67%)	Very Low (<33%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

Notes: No age data for 200. Very high Harvest to EB ratio is a concern, especially predicted for 2008.

QMA: 5-7	Status of Stock				
Parameter	<div><div>←</div><div>lower</div><div>higher</div><div>→</div></div> <div>Risk</div> <div>Health/Sustainability</div> <div><div>←</div><div>higher</div><div>lower</div><div>→</div></div>				
CPUE Commercial Harvest	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	≥0.6	≥0.7	≥0.8	≥0.9	≥1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F/M	<0.5	<0.8	<1.0	>1.0	>1.5
SPR	<0.45	<0.35	<0.20	<0.20	<0.15
2008 - 3 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (<67% and <150%)	Lower than Average (<33% and <67%)	Very Low (<33%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

Notes: Concerns on lack of recruitment, lack of old fish (only 6 year classes in catch). No SCAA conducted due to recruitment failure.

QMA: 5-8	Status of Stock				
Parameter	<div>← lower</div> <div>higher →</div>	<div>Risk</div> <div>Health/Sustainability</div>	<div>higher</div> <div>← lower</div>		
CPUE	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Commercial Harvest					
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	>=0.6	>=0.7	>=0.8	>=0.9	>=1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F : M	<0.5	<0.8	<1.0	>1.0	>1.5
SPR	<0.45	<0.35	>0.20	<0.20	<0.15
2008 - 5 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (>60% and <150%)	Lower than Average (<60% and >150%)	Very Low (<20%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

Notes: No Age data available at time of analysis. 2006 assessment of age showed declining size at age. The cohort model used in the QMA used estimated terminal F values. SCAA predicts strong 2002 year class which is reflected evident in independent assessment of most recent (2006) commercial catch at age data. As a result, the proposed exploitable biomass estimates are likely to be inflated.

QMA: 5-9	Status of Stock				
Parameter	<div><div>← lower</div><div>Risk</div><div>higher →</div></div> <div><div>higher</div><div>Health/Sustainability</div><div>lower</div></div>				
CPUE Commercial Harvest	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	≥0.6	≥0.7	≥0.8	≥0.9	≥1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.7	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 5%	>50%
	<20%	20% to 30%	30% to 40%	40% to 5%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.7	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SMB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F:M	<0.5	<0.6	<1.0	>0.8	>1.5
SPE	<0.05	<0.10	<0.20	<0.20	<0.15
2008 - 3 yr Old Recruitment	Very High (>200%)	Higher than Average (>50% and <200%)	Average (<50% and <250%)	Lower than Average (<1% and <5%)	Very Low (<3%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 5%	>50%
	<20%	20% to 30%	30% to 40%	40% to 5%	>50%

Notes: No Age data available at time of analysis. 2008 assessment of ages showed decline in size at age. The cohort model used in this QMA used estimated terminal F values. SCAA predicts strong 2002 cohort which is NOT evident in independent assessment of most recent (2008) commercial catch-at-age data. As result, the projected exploitable biomass estimates are likely to be inflated.

QMA: 5-9	Status of Stock				
Parameter	Risk				
	← lower higher	Health/Sustainability			higher → lower
CPUE Commercial Harvest	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	≥0.6	≥0.7	≥0.8	≥0.9	≥1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F:M	<0.5	<0.8	<1.0	>1.0	>1.5
SPR	<0.45	<0.15	>0.20	<0.20	<0.15
2006 - 3 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (<67% and >150%)	Lower than Average (>33% and <67%)	Very Low (<33%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

QMA: 6-1	Status of Stock				
Parameter	<div>← lower higher</div> <div>Risk</div> <div>Health/Sustainability</div> <div>higher lower →</div>				
CPUE Commercial Harvest	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	>=0.6	>=0.7	>=0.8	>=0.9	>=1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest : Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSH	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F:M	<0.5	<0.8	<1.0	>1.0	>1.5
SPE	>0.45	<0.35	<0.20	<0.20	<0.15
2008 - 3 yr Old Recruitment	Vary High (>200%)	Higher than Average (>150% and <200%)	Average (>67% and <150%)	Lower than Average (<33% and <67%)	Vary Low (<33%)
Ratio Harvest : Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

Notes: Exploitable biomass is age 4+. Recruitment of 2003 year class to the fishery changes the trajectory of some of these indicators.

QMA: 6-1	Status of Stock				
Parameter	<div><div>← lower</div><div>Risk</div><div>→ higher</div></div> <div>Health/Sustainability</div> <div>lower</div>				
CPUE	Increase over 2 or more consecutive years	No trend over 2 consecutive years	Decline over 2 consecutive years	Decline over 3 consecutive years	Decline over >3 consecutive years
Commercial Harvest					
Predicted Recruitment from Independent Index	3 or more strong year classes predicted	1 or 2 strong year classes predicted	Average year classes predicted	1 or 2 weak year classes predicted	3 + weak year classes predicted
Age Structure of Catch	Multi aged with > 12 year classes	Multi aged with > 10 year classes	Multi aged with > 8 year classes	Multi aged with ≤ 8 year classes	Multi aged with ≤ 6 year classes
Mean Age of Catch	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Size at Age	Major Positive Change	Minor Positive Change	No Change	Minor Negative Change	Major Negative Change
Age Mature : Mean Age	≥ -0.6	≥ -0.7	≥ -0.8	≥ -0.9	≥ -1.0
COHORT ANALYSIS					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
Ratio of Harvest / Exploitable Biomass Estimate 2007 / 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
SCAA					
Total Annual Mortality	<0.45	0.45 to 0.6	0.6 to 0.65	0.65 to 0.70	>0.70
Estimated Exploitable Biomass	Significant increase over 2 consecutive years	No significant change over 2 consecutive years	Significant decrease over 2 consecutive years	Significant decrease over 3 consecutive years	Significant decrease over 5 consecutive years
SSB	Increase over more than 2 years	Increase over 1-2 years	Unchanged	Decrease over 1-2 years	Decrease over more than 2 years
Ratio of F:M	<0.5	<0.8	<1.0	>1.0	>1.5
SPR	>0.45	>0.35	>0.25	>0.20	>0.15
2008 < 5 yr Old Recruitment	Very High (>200%)	Higher than Average (>150% and <200%)	Average (<60% and <150%)	Lower than Average (<20% and <60%)	Very Low (<20%)
Ratio Harvest / Est. Exploitable Biomass 2007 and 2008	<20%	20% to 30%	30% to 40%	40% to 50%	>50%
	<20%	20% to 30%	30% to 40%	40% to 50%	>50%

Notes: Exploitable biomass is age 6+. Recruitment of 2007 year class to the fishery changes the trajectory of some of these indicators.

Appendix B – Catch at Age Tables

Table 4-1-9. The estimated number of lake trout caught in gill nets in management area 6-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	188	0	0	0	3	0	0			0	0	
2	64	124	1,178	0	1,130	0	0	0	0	0	0			0	0	
3	297	1,114	2,836	203	188	188	0	0	1,747	0	0			0	0	
4	2,247	2,847	2,360	1,961	1,683	1,490	1,174	410	2,107	4,218	1,694	0	0	0	0	0
5	578	867	1,649	2,028	2,824	1,661	1,174	1,388	673	402	2,528	0	0	0	2,210	0
6	0	371	238	473	377	688	2,347	684	673	402	1,688			0	2,398	
7	64	0	0	0	0	0	0	410	0	402	0			0	2,178	
8	0	0	0	0	0	0	0	410	0	402	642	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	201	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	274	0	0	0			0	0	
13	0	0	0	0	0	0	0	0	0	0	0			0	0	
14	0	0	0	0	0	0	0	0	0	0	0			0	0	
15	0	0	0	0	0	0	0	0	0	0	0			0	0	
Total	2,210	5,323	6,243	4,733	6,580	3,388	4,658	3,557	4,353	4,227	6,748	0	0	6,148	7,710	0
Mean Age	4.12	4.08	3.83	4.62	4.39	4.75	5.25	6.19	4.15	4.97	5.38	—	—	5.35	5.45	—

Table 4-1-10. CPUE (number/ha) for lake trout caught in gill nets in management area 6-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1		0.0							0.0							
2		0.3							0.0							
3		2.7							9.4							
4	0	7.1	0	0	0	0	0	0	15.1	0	0	0	0	0	0	0
5	0	2.1	0	0	0	0	0	0	6.7	0	0	0	0	0	0	0
6		0.9							6.7							
7		0.0							0.0							
8	0	0.2	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0
9	0	0.0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0
10	0	0.0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0
11	0	0.0	0	0	0	0	0	0	0.0	0	0	0	0	0	0	0
12		0.0							0.0							
13		0.0							0.0							
14		0.0							0.0							
15		0.0							0.0							
Total	0.0	10.1	9.0	4.6	4.6	5.2	5.6	5.6	26.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-2.9. The estimated number of lake trout caught in gill nets in management area 4-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
2	0	0	55	142	84	93	0	0	0	155		0	0	0	0	0
3	393	323	799	283	0	466	0	180	96	311		1,186	0	1,538	516	0
4	589	462	854	793	840	746	0	299	384	932	N	9,489	0	0	0	969
5	393	462	386	311	924	186	578	419	672	932	O	1,186	949	1,538	3,611	1,616
6	65	138	248	311	168	93	578	299	288	311		0	949	5,383	3,095	323
7	0	0	28	170	0	0	0	180	288	466		0	2,847	2,307	2,063	646
8	0	0	28	28	84	93	0	0	0	621	D	0	949	0	1,032	1,616
9	0	0	28	0	0	0	0	60	0	0	A	0	949	0	516	646
10	0	0	0	0	0	0	0	60	0	155	T	0	0	0	0	323
11	0	0	0	28	0	0	0	0	96	0	A	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Total	1,440	1,385	2,425	2,067	2,100	1,678	1,157	1,497	1,824	3,882	0	11,862	6,644	10,766	10,832	6,139
Mean Age	4.09	4.30	4.13	4.58	4.68	4.06	5.50	5.36	5.47	5.48	--	4.00	7.00	5.64	6.05	6.58

Table 4-2.10. CPUE (number/km) for lake trout caught in gill nets in management area 4-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1		0.0														
2		0.0														
3		2.4														
4	N	3.4	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5	O	3.4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6		1.0														
7		0.0														
8	D	0.0	D	D	D	D	D	D	D	D	D	D	D	D	D	D
9	A	0.0	A	A	A	A	A	A	A	A	A	A	A	A	A	A
10	T	0.0	T	T	T	T	T	T	T	T	T	T	T	T	T	T
11	A	0.0	A	A	A	A	A	A	A	A	A	A	A	A	A	A
12		0.0														
13		0.0														
14		0.0														
15		0.0														
Total	0.0	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-3.9. The estimated number of lake trout caught in gill nets in management area 4-3. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2	0	774	93	313	229	0	49	73	0	232	0	0	0	0		
3	73	3,869	935	870	0	185	49	73	1,091	811	739	106	0	1,203		
4	110	1,547	935	1,670	1,143	1,062	485	146	2,546	2,896	3,449	3,513	1,126	0	N	N
5	588	774	935	557	1,600	1,062	534	364	1,819	927	1,478	2,555	5,631	0	O	O
6	257	774	467	731	686	1,062	388	218	2,182	463	246	532	2,253	3,610		
7	184	0	0	278	457	212	194	291	727	463	1,971	106	1,126	3,610		
8	0	387	0	104	229	212	97	291	727	232	493	213	2,253	0	D	D
9	0	0	0	0	0	0	0	0	1,091	0	493	0	0	0	A	A
10	0	0	0	0	0	0	0	0	0	0	493	0	0	0	T	T
11	0	0	0	0	0	0	0	0	0	116	0	319	0	0	A	A
12	0	0	0	0	0	0	0	0	364	0	0	0	0	0		
13	0	0	0	0	0	0	0	73	0	0	0	0	0	0		
14	0	0	0	0	0	0	0	73	0	0	0	0	0	0		
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	1,213	8,124	3,364	4,524	4,342	3,716	1,795	1,601	10,548	6,139	9,362	7,346	12,389	8,424	0	0
Mean Age	5.30	3.81	4.22	4.39	5.11	5.23	5.19	6.50	5.76	4.60	5.55	4.94	5.82	6.00	--	--

Table 4-3.10. CPUE (number/km) for lake trout caught in gill nets in management area 4-3. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0												
2	0.0	3.5	1.1	13.5												
3	0.2	17.3	11.1	37.5												
4	0.3	6.9	11.1	72.1	N	N	N	N	N	N	N	N	N	N	N	N
5	1.7	3.5	11.1	24.0	O	O	O	O	O	O	O	O	O	O	O	O
6	0.7	3.5	5.5	31.5												
7	0.5	0.0	0.0	12.0												
8	0.0	1.7	0.0	4.5	D	D	D	D	D	D	D	D	D	D	D	D
9	0.0	0.0	0.0	0.0	A	A	A	A	A	A	A	A	A	A	A	A
10	0.0	0.0	0.0	0.0	T	T	T	T	T	T	T	T	T	T	T	T
11	0.0	0.0	0.0	0.0	A	A	A	A	A	A	A	A	A	A	A	A
12	0.0	0.0	0.0	0.0												
13	0.0	0.0	0.0	0.0												
14	0.0	0.0	0.0	0.0												
15	0.0	0.0	0.0	0.0												
Total	3.5	36.4	39.9	195.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-4.9. The estimated number of lake trout caught in gill nets in management area 4-4. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	71		0								
2	282	0	472	173	0	0		0								
3	282	167	1,416	471	2,122	465		387								
4	705	1,000	682	974	2,122	2,180	N	1,546	N	N	N	N	N	N	N	N
5	0	444	1,101	2,498	2,122	3,216	O	773	O	O	O	O	O	O	O	O
6	141	167	157	503	0	1,572		3,479								
7	141	222	52	173	0	179		193								
8	0	56	105	79	0	71	D	193	D	D	D	D	D	D	D	D
9	0	0	0	0	0	0	A	0	A	A	A	A	A	A	A	A
10	0	0	0	31	0	0	T	0	T	T	T	T	T	T	T	T
11	0	0	0	0	0	0	A	193	A	A	A	A	A	A	A	A
12	0	0	0	0	0	0		0								
13	0	0	0	0	0	0		193								
14	0	0	0	0	0	0		0								
15	0	0	0	0	0	0		0								
Total	1,552	2,055	3,986	4,902	6,365	7,754	0	6,959	0	0	0	0	0	0	0	0
Mean Age	3.91	4.73	3.91	4.76	4.00	4.84	--	5.69	--	--	--	--	--	--	--	--

Table 4-4.10. CPUE (number/km) for lake trout caught in gill nets in management area 4-4. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1																
2																
3																
4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6																
7																
8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
9	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
11	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
12																
13																
14																
15																
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-5.9. The estimated number of lake trout caught in gill nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	332	0	296	91	187	93	0	0	0	0	0	0	0	0
2	740	2,168	886	3,566	444	1,269	560	541	931	517	0	0	0	0	0	0
3	2,220	1,183	2,327	6,436	7,847	1,677	2,407	1,871	432	2,258	3,624	1,643	0	0	0	0
4	1,480	986	1,884	9,179	4,441	8,315	2,884	3,139	266	3,293	5,200	18,073	3,962	0	0	0
5	1,480	197	388	7,955	15,101	11,962	7,906	3,989	12,869	2,211	12,685	14,787	25,090	18,885	4,439	4,759
6	2,466	986	794	1,350	1,332	4,667	3,631	11,565	6,484	9,314	4,491	7,393	29,492	23,884	22,195	14,277
7	1,480	1,183	111	675	296	974	622	2,829	4,722	3,528	4,806	0	9,244	1,111	13,317	15,863
8	0	0	0	148	148	68	311	340	931	2,070	945	5,750	4,842	2,777	0	9,518
9	0	0	18	211	296	23	41	216	67	423	2,127	0	3,962	1,111	0	793
10	0	0	18	317	592	45	83	232	100	47	315	0	880	0	0	2,380
11	0	0	0	42	444	0	21	247	0	235	0	0	440	1,111	2,220	0
12	0	0	0	0	0	45	21	62	0	94	0	0	440	0	0	793
13	0	0	0	0	0	0	21	62	33	0	0	0	0	555	0	0
14	0	0	0	0	0	0	0	15	100	47	158	0	0	0	1,110	0
15	0	0	0	0	0	0	0	0	67	94	0	0	0	0	0	0
Total	9,865	6,702	6,759	29,879	31,238	29,135	18,695	25,201	27,001	24,131	34,351	47,647	78,352	49,435	43,280	48,384
Mean Age	4.73	4.03	3.62	4.10	4.57	4.71	4.82	5.55	5.64	5.77	5.47	5.07	6.08	6.01	6.67	6.97

Table 4-5.10. CPUE (number/km) for lake trout caught in gill nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1						1.5						0.0	0.0			
2						20.7						0.0	0.0			
3						27.4						3.8	0.0			
4	N	N	N	N	N	135.8	N	N	N	N	N	41.7	0.6	N	N	N
5	O	O	O	O	O	195.4	O	O	O	O	O	34.1	3.9	O	O	O
6						76.3						17.1	4.6			
7						15.9						0.0	1.4			
8	D	D	D	D	D	1.1	D	D	D	D	D	13.3	0.8	D	D	D
9	A	A	A	A	A	0.4	A	A	A	A	A	0.0	0.6	A	A	A
10	T	T	T	T	T	0.7	T	T	T	T	T	0.0	0.1	T	T	T
11	A	A	A	A	A	0.0	A	A	A	A	A	0.0	0.1	A	A	A
12						0.7						0.0	0.1			
13						0.0						0.0	0.0			
14						0.0						0.0	0.0			
15						0.0						0.0	0.0			
Total	0.0	0.0	0.0	0.0	0.0	476.0	0.0	0.0	0.0	0.0	0.0	109.9	12.2	0.0	0.0	0.0

Table 4-5.25. The estimated number of lake trout caught in trap nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0		0	0	0	0	0	0	0	0	0		
2	0	0	0	0		0	0	0	0	0	0	0	0	0		
3	0	0	0	0		67	39	0	0	499	0	0	0	0		
4	0	26	66	29	N	316	272	1,177	458	0	0	0	0	0	N	N
5	135	77	19	123	O	516	834	1,912	5,500	0	0	0	0	3,899	O	O
6	90	0	142	65		416	291	1,235	5,042	5,485	649	0	15,593	1,949		
7	0	26	0	29		50	58	471	3,667	3,989	2,597	0	0	0		
8	0	0	9	0	D	0	0	147	0	1,496	0	12,552	0	0	D	D
9	0	0	0	0	A	0	0	0	0	0	4,545	0	0	0	A	A
10	0	0	9	15	T	0	0	29	0	0	1,948	0	0	0	T	T
11	0	0	0	7	A	0	0	0	0	0	0	0	0	0	A	A
12	0	0	0	0		0	0	0	0	0	0	0	0	0		
13	0	0	0	0		0	0	0	0	0	0	0	0	0		
14	0	0	0	0		0	0	0	0	0	0	0	0	0		
15	0	0	0	0		0	0	0	0	0	0	0	0	0		
Total	225	129	246	269	0	1,366	1,493	4,971	14,667	11,468	9,738	12,552	15,593	5,848	0	0
Mean Age	5.40	5.20	5.62	5.78	--	5.05	5.04	5.32	5.81	6.48	8.47	8.00	6.00	5.33	--	--

Table 4-5.26. CPUE (number/net lift) for lake trout caught in trap nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1																
2																
3																
4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6																
7																
8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
9	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
11	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
12																
13																
14																
15																
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-7.9. The estimated number of lake trout caught in gill nets in management area 4-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0								0		
2	0	18	21	0	0	0								0		
3	0	0	138	38	0	10								0		
4	52	90	74	126	1	46	N	N	N	N	N	N	N	0	N	N
5	26	18	95	76	3	36	O	O	O	O	O	O	O	0	O	O
6	26	18	21	63	0	46								0		
7	0	18	0	0	0	15								0		
8	0	18	0	13	0	0	D	D	D	D	D	D	D	0	D	D
9	0	0	0	0	0	0	A	A	A	A	A	A	A	772	A	A
10	0	0	0	0	0	0	T	T	T	T	T	T	T	0	T	T
11	0	0	0	0	0	0	A	A	A	A	A	A	A	0	A	A
12	0	0	0	0	0	0								0		
13	0	0	0	0	0	0								0		
14	0	0	0	0	0	0								0		
15	0	0	0	0	0	0								0		
Total	105	181	350	316	4	152	0	0	0	0	0	0	0	772	0	0
Mean Age	4.75	4.80	3.88	4.68	4.67	5.07	--	--	--	--	--	--	--	9.00	--	--

Table 4-7.10. CPUE (number/km) for lake trout caught in gill nets in management area 4-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1																
2																
3																
4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6																
7																
8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
9	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
11	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
12																
13																
14																
15																
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 5-1.9. The estimated number of lake trout caught in gill nets in management area 5-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1						110	0	0	0	0	0	0	0	0	0	0
2						0	0	0	0	1,414	0	0	0	0	0	0
3						55	203	0	0	1,225	0	0	0	0	139	142
4	N	N	N	N	N	937	338	1,645	0	2,639	1,628	2,226	988	197	418	850
5	O	O	O	O	O	386	1,148	164	0	471	0	1,336	2,964	2,556	209	567
6						220	338	493	0	2,828	0	0	988	787	1,672	425
7						0	0	164	2,777	94	651	0	0	197	906	709
8	D	D	D	D	D	165	0	0	0	94	0	0	0	197	279	142
9	A	A	A	A	A	0	0	0	0	94	163	0	0	197	139	142
10	T	T	T	T	T	0	0	0	0	94	163	0	0	197	0	0
11	A	A	A	A	A	0	0	0	0	0	0	0	0	0	0	142
12						0	0	0	0	94	0	0	0	0	0	0
13						0	0	0	0	0	0	0	0	0	0	0
14						0	0	0	0	0	0	0	0	0	0	0
15						0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1,874	2,027	2,467	2,777	9,049	2,604	3,562	4,939	4,326	3,762	3,118
Mean Age	--	--	--	--	--	4.59	4.80	4.67	7.00	4.50	5.44	4.38	5.00	5.77	6.11	5.82

Table 5-1.10. CPUE (number/km) for lake trout caught in gill nets in management area 5-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1																
2																
3																
4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6																
7																
8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
9	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
11	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
12																
13																
14																
15																
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 5-2.9. The estimated number of lake trout caught in gill nets in management area 5-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1						0		0		0		0	0	0		
2						0		244		10,259		0	53	0		
3						0		215		0		299	53	0		
4	N	N	N	N	N	2,353	N	1,824	N	0	N	1,376	585	0	N	N
5	O	O	O	O	O	0	O	1,680	O	0	O	1,616	425	1,025	O	O
6						0		72		0		0	1,329	64		
7						0		172		0		0	691	641		
8	D	D	D	D	D	0	D	919	D	0	D	0	266	385	D	D
9	A	A	A	A	A	0	A	0	A	0	A	0	106	128	A	A
10	T	T	T	T	T	0	T	86	T	0	T	0	53	0	T	T
11	A	A	A	A	A	0	A	14	A	0	A	0	0	0	A	A
12						0		29		0		0	0	0		
13						0		0		0		0	53	0		
14						0		0		0		0	0	0		
15						0		0		0		0	0	0		
Total	0	0	0	0	0	2,353	0	5,255	0	10,259	0	3,292	3,614	2,243	0	0
Mean Age	--	--	--	--	--	4.00	--	5.17	--	2.00	--	4.40	6.04	6.34	--	--

Table 5-2.10. CPUE (number/km) for lake trout caught in gill nets in management area 5-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1																
2																
3																
4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6																
7																
8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
9	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
11	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
12																
13																
14																
15																
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 5-6.9. The estimated number of lake trout caught in gill nets in management area 5-6. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1			0	0	0	0	0	0		0	0		0		0	
2			70	592	0	0	3,648	0		0	0		0		0	
3			234	1,185	26,627	262	1,216	0		0	6,128		0		0	
4	N	N	0	4,738	0	131	0	0	N	0	0	N	0	N	0	N
5	O	O	0	592	0	2,746	0	3,378	O	1,482	0	O	4,468	O	0	O
6			0	0	0	5,230	0	0		0	0		0		0	
7			0	0	0	131	0	0		0	0		0		2,940	
8	D	D	0	0	0	262	0	0	D	0	0	D	0	D	0	D
9	A	A	0	0	0	0	0	0	A	0	0	A	0	A	0	A
10	T	T	0	0	0	0	0	0	T	0	0	T	0	T	0	T
11	A	A	0	0	0	0	0	0	A	0	0	A	0	A	0	A
12			0	0	0	0	0	0		0	0		0		0	
13			0	0	0	0	0	0		0	0		0		0	
14			0	0	0	0	0	0		0	0		0		0	
15			0	0	0	0	0	0		0	0		0		0	
Total	0	0	305	7,107	26,627	8,760	4,864	3,378	0	1,482	6,128	0	4,468	0	2,940	0
Mean Age	--	--	2.77	3.75	3.00	5.64	2.25	5.00	--	5.00	3.00	--	5.00	--	7.00	--

Table 5-6.10. CPUE (number/km) for lake trout caught in gill nets in management area 5-6. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1																
2																
3																
4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6																
7																
8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
9	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
11	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
12																
13																
14																
15																
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 5-7.9. The estimated number of lake trout caught in gill nets in management area 5-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1							0	0	0	0	0	0	0	0	0	0
2							0	0	0	614	0	0	0	0	0	0
3							908	27	0	0	1,363	31	22	47	0	0
4	N	N	N	N	N	N	971	1,460	0	0	240	10,862	284	47	0	0
5	O	O	O	O	O	O	532	730	0	0	13	310	7,473	3,671	292	227
6							251	81	0	154	151	0	153	9,515	1,804	795
7							0	189	1,553	0	0	0	0	466	2,340	1,477
8	D	D	D	D	D	D	16	162	0	307	13	0	44	93	195	682
9	A	A	A	A	A	A	16	27	0	0	25	0	22	280	97	341
10	T	T	T	T	T	T	0	0	0	0	13	0	22	0	0	114
11	A	A	A	A	A	A	0	0	0	0	0	31	0	0	49	227
12							0	27	0	0	0	0	0	0	0	0
13							0	0	0	0	0	0	0	0	0	0
14							0	0	0	0	0	0	0	0	0	0
15							0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2,693	2,704	1,553	1,075	1,817	11,234	8,020	14,320	4,777	3,864
Mean Age	--	--	--	--	--	--	4.10	4.90	7.00	4.29	3.56	4.04	5.02	5.82	6.62	7.35

Table 5-7.10. CPUE (number/km) for lake trout caught in gill nets in management area 5-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1																
2																
3																
4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6																
7																
8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
9	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
11	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
12																
13																
14																
15																
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 5-8.9. The estimated number of lake trout caught in gill nets in management area 5-8. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	104	0	1,607	42	92	0	0	0	0	0	282			
2	0	0	622	482	0	547	369	403	66	0	0	0	282			
3	1,842	0	2,385	1,446	16,067	3,030	1,474	699	943	2,676	367	400	375			
4	460	8,653	830	11,324	0	1,010	5,252	4,514	943	669	3,563	3,531	7,509	N	N	N
5	921	0	311	4,578	0	2,861	645	2,122	1,997	0	105	3,731	8,166	O	O	O
6	0	0	104	0	0	7,616	2,488	430	241	2,007	681	200	3,004			
7	0	0	0	1,446	3,213	842	1,106	376	176	0	52	67	282			
8	0	0	0	723	1,607	0	92	349	22	334	0	67	282	D	D	D
9	0	0	0	241	3,213	0	0	54	0	0	0	0	94	A	A	A
10	0	0	0	0	0	0	0	54	0	0	0	0	94	T	T	T
11	0	0	0	0	0	0	0	0	22	0	0	0	0	A	A	A
12	0	0	0	0	0	0	0	0	0	0	0	0	0			
13	0	0	0	0	0	0	0	0	0	0	0	0	94			
14	0	0	0	0	0	0	0	0	0	0	0	0	0			
15	0	0	0	0	0	0	0	0	0	0	0	0	0			
Total	3,223	8,653	4,355	20,239	25,708	15,948	11,518	9,000	4,410	5,686	4,768	7,996	20,463	0	0	0
Mean Age	3.71	4.00	3.21	4.52	4.44	5.03	4.59	4.51	4.49	4.47	4.26	4.53	4.79	--	--	--

Table 5-8.10. CPUE (number/km) for lake trout caught in gill nets in management area 5-8. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0														
2	0.0	0.0														
3	67.0	0.0														
4	16.7	278.0	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5	33.5	0.0	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6	0.0	0.0														
7	0.0	0.0														
8	0.0	0.0	D	D	D	D	D	D	D	D	D	D	D	D	D	D
9	0.0	0.0	A	A	A	A	A	A	A	A	A	A	A	A	A	A
10	0.0	0.0	T	T	T	T	T	T	T	T	T	T	T	T	T	T
11	0.0	0.0	A	A	A	A	A	A	A	A	A	A	A	A	A	A
12	0.0	0.0														
13	0.0	0.0														
14	0.0	0.0														
15	0.0	0.0														
Total	117.2	278.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 5-9.9. The estimated number of lake trout caught in gill nets in management area 5-9. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1				0	0	0	0	0	0	0	0	0	0	0	0	0
2				45	0	23	12	46	0	0	0	0	42	0	0	0
3				89	0	0	270	69	0	137	138	41	84	0	0	0
4	N	N	N	1,873	0	46	761	485	439	228	600	2,477	1,703	171	78	94
5	O	O	O	669	0	184	111	450	659	319	92	344	2,123	1,709	704	517
6				45	0	620	135	46	0	410	261	0	189	1,025	626	470
7				69	2,047	253	184	92	220	91	31	14	105	49	1,017	329
8	D	D	D	0	0	23	37	127	0	46	0	0	0	0	0	141
9	A	A	A	0	0	0	0	12	0	0	0	0	0	24	0	47
10	T	T	T	0	0	0	0	23	0	0	31	0	0	0	0	0
11	A	A	A	0	0	0	0	0	0	0	15	41	0	0	0	0
12				0	0	0	0	12	0	0	0	0	0	0	0	0
13				0	0	0	0	0	0	0	0	0	0	0	0	0
14				0	0	0	0	0	0	0	0	0	0	0	0	0
15				0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	2,809	2,047	1,149	1,510	1,363	1,318	1,229	1,169	2,917	4,246	2,978	2,426	1,597
Mean Age	--	--	--	4.30	7.00	5.94	4.52	5.07	5.00	5.19	4.74	4.22	4.62	5.35	6.06	6.03

Table 5-9.10. CPUE (number/km) for lake trout caught in gill nets in management area 5-9. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1																
2																
3																
4	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
5	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
6																
7																
8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
9	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
10	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
11	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
12																
13																
14																
15																
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 6-1.5. The estimated number of lake trout caught in gill nets in management area 6-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	21	0	73	0	0	0	0	0	0	0	0
2	0	0	1,002	29	0	145	102	293	0	158	299	0	483	0	290	0
3	478	414	2,096	2,654	0	869	614	733	999	2,368	7,487	1,993	1,930	306	1,016	2,085
4	3,820	1,655	2,461	5,965	5,238	1,573	4,453	1,795	2,247	5,367	9,284	6,263	4,825	613	2,178	3,544
5	1,751	1,138	1,321	1,341	4,490	1,946	614	1,685	1,747	894	599	5,694	3,378	2,757	726	834
6	0	931	182	571	0	145	665	256	999	1,052	299	0	1,448	2,451	1,016	208
7	159	0	46	86	0	83	0	147	0	368	299	0	483	306	1,597	625
8	0	103	0	0	0	21	0	0	0	0	0	0	0	1,532	145	1,042
9	0	0	46	57	0	21	0	0	0	105	0	0	483	0	1,016	417
10	0	0	0	29	0	0	0	37	0	0	599	569	0	0	0	208
11	0	0	0	0	0	0	0	0	0	0	0	569	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	6,208	4,240	7,154	10,732	9,728	4,823	6,449	5,019	5,991	10,313	18,867	15,088	13,029	7,964	7,985	8,965
Mean Age	4.28	4.71	3.71	4.05	4.46	4.30	4.17	4.26	4.46	4.19	3.87	4.74	4.56	5.81	5.45	4.95

Table 6-1.6. CPUE (number/km) for lake trout caught in gill nets in management area 6-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0			0.0											
2	0.0	0.0			0.0											
3	0.5	0.2			0.0											
4	4.2	1.0	N	N	24.1	N	N	N	N	N	N	N	N	N	N	N
5	1.9	0.7	O	O	20.7	O	O	O	O	O	O	O	O	O	O	O
6	0.0	0.6			0.0											
7	0.2	0.0			0.0											
8	0.0	0.1	D	D	0.0	D	D	D	D	D	D	D	D	D	D	D
9	0.0	0.0	A	A	0.0	A	A	A	A	A	A	A	A	A	A	A
10	0.0	0.0	T	T	0.0	T	T	T	T	T	T	T	T	T	T	T
11	0.0	0.0	A	A	0.0	A	A	A	A	A	A	A	A	A	A	A
12	0.0	0.0			0.0											
13	0.0	0.0			0.0											
14	0.0	0.0			0.0											
15	0.0	0.0			0.0											
Total	6.9	2.6	0.0	0.0	44.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-1.1. The estimated number of lake whitefish caught in gill nets in management area 4-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0	0	0	0	0	0			0	0	
2	0	0	0	0	0	0	0	0	0	0	0			0	0	
3	261	455	498	430	0	306	0	0	0	0	0			0	0	
4	11,415	6,369	8,958	7,739	827	2,602	656	0	652	331	0	N	N	0	0	N
5	5,740	11,464	16,424	20,638	13,855	9,950	3,282	567	3,914	2,651	1,273	O	O	269	690	O
6	2,674	4,276	12,940	21,068	23,368	14,543	13,786	7,366	13,698	16,238	5,091			2,694	3,448	
7	783	2,457	6,968	7,023	18,818	17,299	20,351	15,298	16,633	17,564	15,273			10,506	4,138	
8	652	728	995	1,290	4,343	10,716	15,099	19,831	14,676	13,919	15,273	D	D	12,122	9,654	D
9	522	182	498	287	620	3,368	8,534	9,066	10,762	9,611	11,455	A	A	7,812	8,965	A
10	457	455	0	0	207	1,837	3,282	3,400	2,935	4,308	6,364	T	T	4,849	2,758	T
11	326	364	1,493	143	0	153	656	0	1,305	1,326	6,364	A	A	1,347	2,758	A
12	130	364	0	0	0	153	0	0	0	331	1,273			808	0	
13	65	182	0	0	0	153	0	567	0	0	0			269	0	
14	0	0	498	0	0	153	0	0	0	0	0			0	0	
15	0	0	0	0	0	0	0	0	0	0	0			0	0	
Total	23,026	27,296	49,272	58,616	62,038	61,234	65,648	56,094	64,574	66,279	62,366	0	0	40,677	32,411	0
Mean Age	5.09	5.49	5.72	5.55	6.24	6.72	7.34	7.77	7.41	7.46	8.31	--	--	8.23	8.30	--

Table 4-1.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 4-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	
3	0.7	0.9	0.9	0.9	0.0	0.5	0.0	0.0	0.0	0.0	0.0			0.0	0.0	
4	29.6	12.6	15.7	15.8	1.8	4.1	0.9	0.0	1.0	0.5	0.0	N	N	0.0	0.0	N
5	14.9	22.8	28.7	42.3	30.5	15.7	4.7	0.9	6.0	4.3	2.3	O	O	0.4	1.7	O
6	6.9	8.5	22.6	43.1	51.5	23.0	19.8	12.1	21.1	26.5	9.2			4.0	8.5	
7	2.0	4.9	12.2	14.4	41.5	27.4	29.2	25.1	25.7	28.7	27.7			15.4	10.2	
8	1.7	1.4	1.7	2.6	9.6	17.0	21.6	32.5	22.6	22.7	27.7	D	D	17.8	23.7	D
9	1.4	0.4	0.9	0.6	1.4	5.3	12.2	14.9	16.6	15.7	20.7	A	A	11.5	22.0	A
10	1.2	0.9	0.0	0.0	0.5	2.9	4.7	5.6	4.5	7.0	11.5	T	T	7.1	6.8	T
11	0.8	0.7	2.6	0.3	0.0	0.2	0.9	0.0	2.0	2.2	11.5	A	A	2.0	6.8	A
12	0.3	0.7	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.5	2.3			1.2	0.0	
13	0.2	0.4	0.0	0.0	0.0	0.2	0.0	0.9	0.0	0.0	0.0			0.4	0.0	
14	0.0	0.0	0.9	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0			0.0	0.0	
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	
Total	59.7	54.2	86.2	120.0	136.8	96.9	94.1	91.9	99.6	108.2	112.9	0.0	0.0	59.8	79.7	0.0

Table 4-2.1. The estimated number of lake whitefish caught in gill nets in management area 4-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	175	0	239	0	0	0	0	0	0	0	0	0	0	0	0
3	1,703	2,369	898	239	0	375	0	0	0	0	0	0	0	0	0	0
4	18,383	9,871	26,455	14,346	2,236	2,998	0	0	463	0	0	0	1,003	0	0	0
5	18,470	9,740	26,536	25,704	41,928	13,116	15,128	5,378	6,025	2,851	4,242	1,413	5,015	2,843	0	613
6	2,926	2,808	15,922	30,366	36,897	36,725	32,777	15,059	26,416	21,990	42,420	10,599	17,051	13,268	4,244	6,129
7	742	965	6,614	15,661	21,803	37,475	57,991	34,421	17,611	23,212	33,936	28,263	32,096	32,696	18,036	20,839
8	742	483	2,205	5,021	5,777	14,990	12,607	37,648	12,976	22,398	21,210	38,155	23,069	38,856	33,951	36,174
9	349	132	735	2,391	1,304	6,371	5,043	11,832	17,147	20,362	4,242	14,838	11,535	18,480	26,524	17,774
10	131	175	653	956	559	375	2,521	2,151	8,805	8,959	0	9,186	4,514	9,003	14,853	6,742
11	0	0	327	359	373	0	0	1,076	2,781	1,222	0	2,120	3,511	2,369	5,305	1,226
12	0	88	245	239	186	0	0	0	407	0	0	707	1,003	0	1,061	0
13	0	0	0	0	186	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	120	0	0	0	0	0	0	0	0	0	0	0	0
15	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	43,491	26,806	80,589	95,642	111,249	112,424	126,067	107,566	92,224	101,401	106,051	105,281	98,797	117,516	103,974	90,096
Mean Age	4.71	4.74	5.22	5.84	5.98	6.60	6.74	7.43	7.49	7.68	6.80	7.89	7.49	7.79	8.48	8.00

Table 4-2.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 4-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	1.8	3.6	0.7	0.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	19.4	14.9	22.0	16.1	2.6	3.6	0.0	0.0	0.6	0.0	0.0	0.0	0.8	0.0	0.0	0.0
5	19.5	14.7	22.1	28.8	48.4	15.7	16.7	6.6	7.6	2.6	3.1	1.1	3.8	1.8	0.0	0.5
6	3.1	4.2	13.2	34.0	42.6	43.9	36.1	18.5	33.2	19.9	31.1	8.2	13.0	8.5	2.7	5.1
7	0.8	1.5	5.5	17.5	25.2	44.8	63.9	42.2	22.1	21.0	24.9	21.8	24.5	21.0	11.4	17.5
8	0.8	0.7	1.8	5.6	6.7	17.9	13.9	46.2	16.3	20.2	15.5	29.5	17.6	24.9	21.4	30.9
9	0.4	0.2	0.6	2.7	1.5	7.6	5.6	14.5	21.5	18.4	3.1	11.5	8.8	11.9	16.7	14.9
10	0.1	0.3	0.5	1.1	0.6	0.4	2.8	2.6	11.1	8.1	0.0	7.1	3.5	5.8	9.4	5.7
11	0.0	0.0	0.3	0.4	0.4	0.0	0.0	1.3	3.5	1.1	0.0	1.6	2.7	1.5	3.3	1.0
12	0.0	0.1	0.2	0.3	0.2	0.0	0.0	0.0	0.0	0.4	0.0	0.5	0.8	0.0	0.7	0.0
13	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	45.9	40.5	67.0	107.1	128.4	134.3	138.9	132.0	115.9	91.6	77.7	81.3	75.5	75.4	65.5	75.6

Table 4-2.13. The estimated number of lake whitefish caught in trap nets in management area 4-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1,484	785	302	402	506	1,044	631	0	0	256	328	0	905	0	0	0
3	4,658	5,323	3,654	3,149	2,783	6,658	5,363	2,268	2,404	2,560	4,917	0	4,073	0	296	0
4	9,198	7,267	4,890	13,266	5,483	9,791	7,571	7,055	10,578	5,632	8,524	3,862	8,145	1,486	887	0
5	3,798	2,985	2,335	10,653	23,196	16,187	10,725	12,850	17,791	15,616	10,818	22,205	13,123	8,914	9,762	2,634
6	712	1,007	797	8,576	12,568	15,143	13,880	17,133	19,233	19,200	14,752	26,067	17,195	16,343	7,100	9,220
7	148	239	412	4,221	5,989	10,704	17,980	16,377	17,150	18,944	19,014	29,928	15,385	20,800	11,833	17,563
8	30	68	110	1,675	1,771	3,916	7,886	9,574	16,989	16,384	17,047	29,928	20,815	19,809	14,496	18,002
9	0	136	27	938	506	392	2,208	4,031	10,097	15,360	10,491	11,585	9,050	15,352	11,833	8,781
10	0	17	82	402	84	131	0	756	4,488	5,632	4,262	7,723	3,620	3,962	8,875	7,464
11	0	17	27	268	0	0	0	252	1,923	2,048	983	0	1,358	990	2,071	1,317
12	0	0	27	67	84	0	0	0	0	0	0	965	0	495	1,183	0
13	0	0	0	67	0	0	0	0	0	0	0	0	0	0	296	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	20,058	17,844	12,665	43,682	52,970	63,966	66,243	70,296	100,654	101,632	91,138	132,264	93,669	88,151	68,633	64,982
Mean Age	3.90	4.00	4.19	5.22	5.38	5.38	5.94	6.26	6.62	6.93	6.69	6.99	6.64	7.34	7.73	7.75

Table 4-2.14. CPUE (number/net lift) for lake whitefish caught in trap nets in management area 4-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	9.4	5.6	3.8	2.9	4.5	7.2	3.4	0.0	0.0	1.9	2.6	0.0	6.9	0.0	0.0	0.0
3	29.5	38.0	45.7	22.6	24.6	45.6	28.5	13.3	16.2	19.0	38.7	0.0	31.1	0.0	2.0	0.0
4	58.3	51.9	61.1	96.1	48.5	67.1	40.3	41.5	71.5	41.7	67.1	27.8	62.2	8.9	6.0	0.0
5	24.1	21.3	29.2	77.2	205.3	110.9	57.0	75.6	120.2	115.7	85.2	159.7	100.2	53.4	66.0	17.6
6	4.5	7.2	10.0	62.1	111.2	103.7	73.8	100.8	130.0	142.2	116.2	187.5	131.3	97.9	48.0	61.5
7	0.9	1.7	5.2	30.6	53.0	73.3	95.6	96.3	115.9	140.3	149.7	215.3	117.4	124.5	80.0	117.1
8	0.2	0.5	1.4	12.1	15.7	26.8	41.9	56.3	114.8	121.4	134.2	215.3	158.9	118.6	97.9	120.0
9	0.0	1.0	0.3	6.8	4.5	2.7	11.7	23.7	68.2	113.8	82.6	83.3	69.1	91.9	80.0	58.5
10	0.0	0.1	1.0	2.9	0.7	0.9	0.0	4.4	30.3	41.7	33.6	55.6	27.6	23.7	60.0	49.8
11	0.0	0.1	0.3	1.9	0.0	0.0	0.0	1.5	13.0	15.2	7.7	0.0	10.4	5.9	14.0	8.8
12	0.0	0.0	0.3	0.5	0.7	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	3.0	8.0	0.0
13	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	127.2	127.4	158.3	316.5	468.8	438.1	352.4	413.5	680.1	752.8	717.6	951.5	715.0	527.8	463.7	433.2

Table 4-3.1. The estimated number of lake whitefish caught in gill nets in management area 4-3. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	300	498	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	2,848	1,744	308	347	87	196	0	0	0	0	0	0	0	0	0	0
4	17,612	20,510	11,697	6,584	1,050	589	635	0	158	556	294	0	557	0	0	0
5	32,526	19,430	25,446	17,443	31,310	11,983	6,353	0	2,366	5,285	587	1,111	2,598	1,394	0	0
6	10,417	17,520	18,161	30,496	38,395	37,323	14,929	8,177	15,143	15,019	11,747	6,506	9,649	7,901	793	3,342
7	2,323	5,729	12,723	12,822	20,028	30,055	34,305	16,354	26,342	24,754	32,599	17,295	21,524	20,449	7,934	11,418
8	674	996	5,335	8,317	6,559	8,250	14,929	26,936	33,282	28,370	38,179	30,148	31,543	26,026	11,107	16,710
9	749	332	1,334	3,696	1,662	1,964	4,447	14,430	22,398	21,138	22,026	23,166	19,297	7,901	7,934	5,848
10	974	332	923	693	525	2,357	2,224	4,810	7,414	13,629	9,104	11,583	8,535	5,577	10,314	3,063
11	375	166	410	809	0	589	318	481	2,208	1,669	881	2,697	2,969	465	793	1,114
12	75	83	410	347	87	196	318	0	315	556	587	635	186	0	793	0
13	0	0	103	116	0	0	318	0	158	0	0	0	0	0	0	0
14	0	0	0	116	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	68,874	67,341	76,852	81,784	99,703	93,505	78,776	71,188	109,783	110,977	116,005	93,141	96,856	69,712	39,668	41,496
Mean Age	5.05	5.16	5.83	6.24	6.07	6.56	7.07	7.90	7.83	7.84	7.88	8.25	7.95	7.71	8.62	7.93

Table 4-3.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 4-3. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	2.9	1.7	0.3	0.4	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	18.0	19.8	11.2	7.3	1.1	0.6	0.8	0.0	0.1	0.5	0.2	0.0	0.4	0.0	0.0	0.0
5	33.2	18.8	24.3	19.3	32.8	12.5	8.0	0.0	1.7	4.5	0.3	0.8	1.8	1.5	0.0	0.0
6	10.6	16.9	17.3	33.8	40.2	38.9	18.7	11.4	10.7	12.7	6.6	4.9	6.5	8.5	1.5	3.7
7	2.4	5.5	12.1	14.2	21.0	31.3	43.1	22.7	18.7	20.9	18.3	12.9	14.6	22.1	14.6	12.5
8	0.7	1.0	5.1	9.2	6.9	8.6	18.7	37.4	23.6	23.9	21.4	22.5	21.4	28.1	20.4	18.3
9	0.8	0.3	1.3	4.1	1.7	2.0	5.6	20.0	15.9	17.8	12.4	17.3	13.1	8.5	14.6	6.4
10	1.0	0.3	0.9	0.8	0.5	2.5	2.8	6.7	5.3	11.5	5.1	8.6	5.8	6.0	18.9	3.4
11	0.4	0.2	0.4	0.9	0.0	0.6	0.4	0.7	1.6	1.4	0.5	2.0	2.0	0.5	1.5	1.2
12	0.1	0.1	0.4	0.4	0.1	0.2	0.4	0.0	0.2	0.5	0.3	0.5	0.1	0.0	1.5	0.0
13	0.0	0.0	0.1	0.1	0.0	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	70.3	65.0	73.3	90.6	104.3	97.5	98.9	98.9	77.8	93.6	65.2	69.5	65.6	75.3	72.8	45.5

Table 4-4.1. The estimated number of lake whitefish caught in gill nets in management area 4-4. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	4,412	0	2,468	577	0	0	0	0	0	0	0	0	0	0	0	
3	4,202	1,809	7,280	961	410	1,938	0	0	0	0	0	0	0	0	0	
4	39,286	51,686	25,541	11,343	4,097	5,168	0	1,775	0	0	3,609	2,909	0	0	0	N
5	171,642	76,366	109,813	76,322	42,197	35,851	1,708	1,775	1,973	20,879	3,609	0	1,438	0	729	O
6	57,774	105,957	51,451	66,422	111,432	172,473	14,687	41,718	12,822	27,839	7,219	17,453	23,009	20,003	9,474	
7	22,269	35,534	36,522	30,471	55,306	148,895	72,410	119,829	63,122	34,799	61,360	52,359	37,389	40,007	40,813	
8	4,202	18,219	10,858	19,417	20,074	51,677	44,402	135,807	104,547	48,718	93,845	87,264	64,712	36,006	39,355	D
9	1,471	4,781	3,208	6,633	4,097	10,658	7,514	47,044	71,999	125,276	79,408	66,903	80,530	17,603	32,796	A
10	630	2,843	1,851	2,403	1,639	3,230	342	7,989	12,822	48,718	32,485	52,359	46,017	8,801	20,406	T
11	420	1,680	494	577	410	323	683	888	3,945	0	0	5,818	15,818	1,600	5,830	A
12	210	775	864	96	0	323	0	0	0	0	0	0	8,628	0	2,915	
13	0	388	0	384	0	323	0	888	0	0	3,609	0	0	0	2,186	
14	0	0	0	0	410	0	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	306,728	300,039	250,348	215,606	240,070	430,859	141,745	357,713	271,229	306,230	285,146	285,063	277,540	124,020	154,505	0
Mean Age	5.22	5.76	5.56	6.00	6.28	6.58	7.32	7.59	8.05	8.23	8.22	8.32	8.60	7.68	8.33	--

Table 4-4.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 4-4. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2	3.8	0.0	2.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
3	3.6	1.4	8.7	1.0	0.6	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
4	33.9	39.5	30.5	11.8	5.8	5.6	0.0	8.1	0.0	0.0	2.2	1.7	0.0	0.0	0.0	N
5	148.2	58.3	131.2	79.6	60.0	38.8	2.2	8.1	2.6	11.7	2.2	0.0	0.7	0.0	0.9	O
6	49.9	80.9	61.5	69.3	158.5	186.5	18.9	189.2	16.8	15.6	4.3	9.9	11.4	23.3	11.3	
7	19.2	27.1	43.6	31.8	78.7	161.0	93.0	543.5	82.5	19.4	36.8	29.8	18.5	46.7	48.7	
8	3.6	13.9	13.0	20.3	28.6	55.9	57.0	616.0	136.6	27.2	56.3	49.6	32.0	42.0	46.9	D
9	1.3	3.7	3.8	6.9	5.8	11.5	9.6	213.4	94.1	70.0	47.7	38.1	39.8	20.5	39.1	A
10	0.5	2.2	2.2	2.5	2.3	3.5	0.4	36.2	16.8	27.2	19.5	29.8	22.7	10.3	24.3	T
11	0.4	1.3	0.6	0.6	0.6	0.3	0.9	4.0	5.2	0.0	0.0	3.3	7.8	1.9	7.0	A
12	0.2	0.6	1.0	0.1	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	3.5	
13	0.0	0.3	0.0	0.4	0.0	0.3	0.0	4.0	0.0	0.0	2.2	0.0	0.0	0.0	2.6	
14	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total	264.9	229.1	299.2	224.9	341.4	465.9	182.0	1,622.5	354.3	171.1	171.1	162.1	137.2	144.6	184.3	0.0

Table 4-5.1. The estimated number of lake whitefish caught in gill nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	8,821	549	11,175	4,447	2,745	783	1,147	14,779	0	0	0	0	0	0	0	0
2	46,988	32,950	4,030	19,722	20,127	13,318	2,867	37,686	7,591	15,200	0	2,651	5,599	0	4,194	1,810
3	54,189	20,136	9,709	2,320	3,476	8,356	1,147	6,650	12,146	25,650	2,520	7,954	30,327	0	1,398	2,714
4	193,711	252,252	98,007	36,158	14,638	12,012	4,014	5,173	759	6,650	15,118	7,070	6,998	1,309	4,660	1,206
5	59,590	132,350	193,999	198,771	100,086	60,843	24,658	29,558	21,255	19,950	22,677	42,420	35,925	26,180	38,210	13,271
6	87,134	37,344	75,841	227,001	248,660	193,758	68,239	99,757	119,941	77,900	80,629	136,981	128,305	152,893	161,692	113,705
7	35,826	45,398	31,142	73,669	152,050	270,008	205,865	180,302	161,692	141,550	198,212	186,471	193,158	246,618	260,478	193,932
8	23,584	19,221	17,586	31,711	62,577	121,425	270,663	232,029	192,816	208,049	187,293	136,981	174,495	137,970	145,849	152,613
9	25,564	15,194	15,388	16,049	22,140	41,259	129,024	158,134	192,057	197,599	125,982	78,654	103,111	47,124	53,587	72,385
10	20,883	12,448	7,694	9,281	10,612	12,534	59,064	44,337	75,912	76,950	46,193	37,118	48,989	12,043	16,775	19,303
11	4,141	7,322	3,481	5,414	5,855	5,745	11,469	15,518	25,810	23,750	11,758	5,303	6,065	2,618	932	6,635
12	720	915	1,466	2,320	2,379	1,567	5,734	7,389	4,555	950	1,680	884	1,866	524	0	302
13	0	0	550	580	366	522	1,147	0	0	0	0	0	467	0	0	0
14	0	183	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	561,150	576,262	470,067	627,443	645,710	742,131	785,038	831,312	814,533	794,198	692,062	642,487	735,305	627,278	687,774	577,877
Mean Age	4.98	4.94	5.32	5.82	6.31	6.76	7.80	7.36	7.83	7.78	7.65	7.22	7.26	7.12	7.04	7.38

Table 4-5.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	3.4	0.2	5.9	1.7	1.1	0.3	0.4	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	17.8	13.1	2.1	7.4	8.1	5.2	1.0	11.9	2.2	3.8	0.0	0.8	1.6	0.0	1.1	0.5
3	20.6	8.0	5.1	0.9	1.4	3.3	0.4	2.1	3.5	6.4	0.7	2.5	8.6	0.0	0.4	0.7
4	73.6	100.6	51.8	13.5	5.9	4.7	1.3	1.6	0.2	1.7	4.1	2.2	2.0	0.5	1.2	0.3
5	22.6	52.8	102.6	74.4	40.2	23.7	8.3	9.4	6.1	5.0	6.1	13.3	10.2	9.8	10.1	3.4
6	33.1	14.9	40.1	85.0	99.9	75.4	22.9	31.6	34.6	19.5	21.6	43.0	36.3	57.2	42.9	29.1
7	13.6	18.1	16.5	27.6	61.1	105.0	69.2	57.0	46.6	35.4	53.2	58.5	54.6	92.2	69.1	49.6
8	9.0	7.7	9.3	11.9	25.1	47.2	91.0	73.4	55.5	52.0	50.3	43.0	49.3	51.6	38.7	39.1
9	9.7	6.1	8.1	6.0	8.9	16.0	43.4	50.0	55.3	49.4	33.8	24.7	29.2	17.6	14.2	18.5
10	7.9	5.0	4.1	3.5	4.3	4.9	19.9	14.0	21.9	19.2	12.4	11.6	13.9	4.5	4.4	4.9
11	1.6	2.9	1.8	2.0	2.4	2.2	3.9	4.9	7.4	5.9	3.2	1.7	1.7	1.0	0.2	1.7
12	0.3	0.4	0.8	0.9	1.0	0.6	1.9	2.3	1.3	0.2	0.5	0.3	0.5	0.2	0.0	0.1
13	0.0	0.0	0.3	0.2	0.1	0.2	0.4	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
14	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	213.2	229.9	248.5	235.0	259.4	288.7	263.9	263.0	234.6	198.4	185.8	201.6	207.9	234.6	182.3	147.9

Table 4-5.21. The estimated number of lake whitefish caught in trap nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	526	0	0	890	235	0	0	0	0	0	0	220	0	0	0	0
3	11,759	12,986	2,498	4,449	1,883	2,583	0	1,285	2,412	1,169	2,808	0	0	177	0	0
4	9,167	57,459	38,903	19,576	13,768	12,516	9,147	3,855	5,790	4,674	11,545	3,296	0	1,062	0	0
5	1,691	19,480	40,687	33,146	29,302	12,715	9,563	13,280	13,027	8,959	5,616	9,008	2,118	2,833	373	716
6	2,217	7,473	13,741	12,791	19,652	34,568	4,989	9,424	15,439	11,686	8,736	10,106	4,501	10,445	1,492	3,042
7	1,352	7,228	5,889	4,227	7,061	20,661	14,968	11,995	16,404	15,191	16,849	11,864	9,266	11,153	1,604	3,579
8	1,165	5,513	2,855	2,002	4,001	7,152	14,136	13,280	13,992	18,308	9,985	6,811	7,943	5,134	1,567	1,074
9	601	2,205	1,606	1,446	2,824	1,391	2,910	7,283	5,790	10,128	7,176	5,493	2,912	1,416	485	537
10	263	2,205	1,963	1,335	1,059	795	1,663	2,570	2,895	5,453	1,248	879	2,118	177	149	0
11	75	980	714	667	588	795	416	1,285	965	1,169	312	659	265	0	0	0
12	113	0	178	111	118	397	0	0	0	390	0	0	0	0	0	0
13	38	0	0	111	0	0	0	428	0	390	0	439	265	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	28,965	115,530	109,034	80,752	80,491	93,571	57,792	64,686	76,713	77,515	64,275	48,774	29,388	32,398	5,671	8,948
Mean Age	4.29	4.83	5.11	5.18	5.60	6.03	6.57	6.85	6.60	7.20	6.43	6.73	7.48	6.64	7.13	6.74

Table 4-5.22. CPUE (number/net lift) for lake whitefish caught in trap nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	2.7	0.0	0.0	7.1	2.3	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0
3	60.1	46.1	12.5	35.5	18.8	19.7	0.0	11.3	17.3	9.6	18.2	0.0	0.0	2.0	0.0	0.0
4	46.8	203.8	195.2	156.1	137.1	95.4	133.7	34.0	41.6	38.6	74.8	30.0	0.0	12.3	0.0	0.0
5	8.6	69.1	204.1	264.2	291.8	96.9	139.7	117.0	93.5	74.0	36.4	82.1	14.9	32.7	13.3	13.0
6	11.3	26.5	68.9	102.0	195.7	263.6	72.9	83.0	110.8	96.5	56.6	92.1	31.6	120.5	53.3	55.1
7	6.9	25.6	29.5	33.7	70.3	157.5	218.7	105.7	117.8	125.4	109.1	108.2	65.1	128.7	57.3	64.8
8	6.0	19.6	14.3	16.0	39.8	54.5	206.6	117.0	100.4	151.2	64.7	62.1	55.8	59.2	56.0	19.4
9	3.1	7.8	8.1	11.5	28.1	10.6	42.5	64.1	41.6	83.6	46.5	50.1	20.5	16.3	17.3	9.7
10	1.3	7.8	9.8	10.6	10.5	6.1	24.3	22.6	20.8	45.0	8.1	8.0	14.9	2.0	5.3	0.0
11	0.4	3.5	3.6	5.3	5.9	6.1	11.3	6.9	9.6	2.0	6.0	1.9	0.0	0.0	0.0	0.0
12	0.6	0.0	0.9	0.9	1.2	3.0	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0
13	0.2	0.0	0.0	0.9	0.0	0.0	0.0	3.8	0.0	3.2	0.0	4.0	1.9	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	148.0	409.7	547.0	643.8	801.7	713.4	844.6	569.8	550.7	640.1	416.3	444.6	206.5	373.8	202.6	161.9

Table 4-7.1. The estimated number of lake whitefish caught in gill nets in management area 4-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0			0	0			0	0	0	
2	0	0	0	0	0	139			0	0			0	0	0	
3	1,522	1,572	325	0	25	0			0	0			0	0	0	
4	12,175	16,473	4,321	4,209	279	0	N	N	0	0	N	N	0	0	0	N
5	32,554	26,656	15,984	21,958	1,853	2,772	O	O	0	0	O	O	0	55	0	O
6	7,808	14,526	10,269	12,992	2,335	13,585			1,385	3,365			1,582	165	188	
7	2,183	4,343	6,412	6,282	787	12,753			4,570	3,365			2,532	936	1,128	
8	529	1,498	1,859	2,623	152	4,297	D	D	11,771	3,365	D	D	2,848	441	1,128	D
9	198	599	651	732	25	693	A	A	7,201	13,460	A	A	2,848	771	564	A
10	198	150	93	305	0	554	T	T	1,662	6,730	T	T	949	165	564	T
11	66	300	46	0	0	0	A	A	0	0	A	A	633	55	188	A
12	66	0	0	0	0	0			138	0			0	0	0	
13	66	0	0	0	0	0			0	0			0	0	0	
14	0	0	0	0	0	0			0	0			0	0	0	
15	0	0	0	0	0	0			0	0			0	0	0	
Total	57,366	66,116	39,960	49,099	5,456	34,793	0	0	26,726	30,285	0	0	11,393	2,588	3,760	0
Mean Age	5.03	5.20	5.68	5.69	5.76	6.64	--	--	8.14	8.56	--	--	8.08	7.94	8.20	--

Table 4-7.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 4-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0			0.0	0.0	0.0	
2	0.0	0.0	0.0	0.0	0.0	1.6			0.0	0.0			0.0	0.0	0.0	
3	3.7	3.1	0.7	0.0	0.9	0.0			0.0	0.0			0.0	0.0	0.0	
4	29.2	32.4	9.6	6.0	9.6	0.0	N	N	0.0	0.0	N	N	0.0	0.0	0.0	N
5	78.1	52.4	35.7	31.1	63.9	31.5	O	O	0.0	0.0	O	O	0.0	0.7	0.0	O
6	18.7	28.5	22.9	18.4	80.5	154.2			14.6	9.6			10.4	2.1	1.8	
7	5.2	8.5	14.3	8.9	27.1	144.7			48.2	9.6			16.7	11.7	11.0	
8	1.3	2.9	4.1	3.7	5.3	48.8	D	D	124.2	9.6	D	D	18.7	5.5	11.0	D
9	0.5	1.2	1.5	1.0	0.9	7.9	A	A	76.0	38.6	A	A	18.7	9.6	5.5	A
10	0.5	0.3	0.2	0.4	0.0	6.3	T	T	17.5	19.3	T	T	6.2	2.1	5.5	T
11	0.2	0.6	0.1	0.0	0.0	0.0	A	A	0.0	0.0	A	A	4.2	0.7	1.8	A
12	0.2	0.0	0.0	0.0	0.0	0.0			1.5	0.0			0.0	0.0	0.0	
13	0.2	0.0	0.0	0.0	0.0	0.0			0.0	0.0			0.0	0.0	0.0	
14	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0			0.0	0.0	0.0	
15	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0			0.0	0.0	0.0	
Total	137.7	129.9	89.1	69.4	188.2	394.8	0.0	0.0	282.0	86.8	0.0	0.0	75.0	32.3	36.6	0.0

Table 5-1.1. The estimated number of lake whitefish caught in gill nets in management area 5-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1					0	0	0	0	0	0	0	0	0	0	0	0
2					843	0	0	0	0	324	0	0	0	0	0	0
3					2,108	2,504	309	0	38	1,376	0	0	0	76	0	0
4	N	N	N	N	843	3,756	2,471	1,548	607	324	640	0	264	681	162	1,976
5	O	O	O	O	18,126	9,859	8,339	12,384	3,034	1,538	853	385	1,320	2,193	770	5,611
6					15,175	10,798	1,544	6,966	5,158	5,180	2,347	256	1,056	4,689	2,754	3,951
7					6,745	3,443	9,574	3,096	5,310	5,827	4,338	1,282	3,167	4,614	3,564	2,608
8	D	D	D	D	843	939	5,559	9,288	3,413	6,556	4,622	2,308	6,070	3,782	4,334	3,714
9	A	A	A	A	843	156	1,235	2,322	3,300	5,261	4,907	2,821	6,334	4,235	4,658	4,504
10	T	T	T	T	0	0	927	1,548	1,479	4,047	2,773	2,308	3,959	4,084	5,833	2,687
11	A	A	A	A	0	0	309	0	417	1,214	711	2,693	2,375	1,891	6,076	2,529
12					0	0	0	0	114	81	142	898	1,320	1,286	3,483	1,739
13					0	0	309	0	0	0	0	0	0	151	1,377	948
14					0	0	0	0	38	0	0	0	0	76	486	237
15					0	0	0	0	38	0	0	0	0	0	81	0
Total	0	0	0	0	45,526	31,456	30,575	37,151	22,946	31,726	21,334	12,952	25,863	27,758	33,578	30,504
Mean Age	--	--	--	--	5.59	5.39	6.58	6.52	7.18	7.57	7.95	9.25	8.63	8.03	9.39	7.85

Table 5-1.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 5-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1					0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2					1.9	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0
3					4.7	6.1	0.4	0.0	0.1	3.0	0.0	0.0	0.0	0.1	0.0	0.0
4	N	N	N	N	1.9	9.2	3.5	2.8	1.4	0.7	1.4	0.0	0.5	1.2	0.2	2.1
5	O	O	O	O	40.8	24.1	11.8	22.2	6.8	3.4	1.9	1.1	2.5	3.8	0.9	6.0
6					34.2	26.4	2.2	12.5	11.6	11.4	5.3	0.7	2.0	8.1	3.2	4.2
7					15.2	8.4	13.6	5.6	12.0	12.9	9.8	3.6	6.0	7.9	4.1	2.8
8	D	D	D	D	1.9	2.3	7.9	16.7	7.7	14.5	10.4	6.5	11.5	6.5	5.0	4.0
9	A	A	A	A	1.9	0.4	1.8	4.2	7.4	11.6	11.1	8.0	12.0	7.3	5.4	4.8
10	T	T	T	T	0.0	0.0	1.3	2.8	3.3	8.9	6.3	6.5	7.5	7.0	6.7	2.9
11	A	A	A	A	0.0	0.0	0.4	0.0	0.9	2.7	1.6	7.6	4.5	3.3	7.0	2.7
12					0.0	0.0	0.0	0.0	0.3	0.2	0.3	2.5	2.5	2.2	4.0	1.9
13					0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.6	1.0
14					0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.6	0.3
15					0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total	0.0	0.0	0.0	0.0	102.6	76.8	43.4	66.7	51.7	70.0	48.1	36.7	49.2	47.7	38.8	32.7

Table 5-2.1. The estimated number of lake whitefish caught in gill nets in management area 5-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0		0	0	0		0	0	0		
2	5,821	453	324	24	204	0		0	0	0		0	0	0		
3	4,365	2,444	8,583	1,119	5,019	3,708		0	0	1,247		0	76	0		
4	1,455	1,584	4,513	5,231	2,448	4,470	N	894	280	1,871	N	534	76	44	N	N
5	243	407	619	3,212	5,876	2,235	O	2,682	1,401	2,494	O	411	5,293	620	O	O
6	0	498	88	681	2,163	3,556		1,753	2,615	3,741		329	1,134	2,126		
7	0	45	236	97	286	2,489		2,407	1,121	2,494		1,274	1,437	487		
8	0	91	88	49	82	508	D	4,435	747	624	D	1,952	2,344	930	D	D
9	0	136	0	122	41	102	A	1,891	2,895	0	A	2,836	2,949	2,259	A	A
10	0	272	59	24	82	51	T	481	934	0	T	1,747	1,588	1,152	T	T
11	0	91	116	24	41	0	A	69	167	0	A	1,089	681	842	A	A
12	243	91	59	0	0	0		103	280	0		288	832	354		
13	0	45	29	0	41	51		34	0	0		41	151	89		
14	0	0	0	24	0	51		69	0	0		0	0	44		
15	0	45	29	0	41	0		0	0	0		21	0	0		
Total	12,126	6,200	14,747	10,609	16,322	17,220	0	14,818	10,458	12,471	0	10,522	16,561	8,949	0	0
Mean Age	2.86	4.50	3.65	4.48	4.48	4.98	--	7.09	7.50	5.50	--	8.55	7.52	8.27	--	--

Table 5-2.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 5-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
2	64.0	6.1	2.4	0.2	0.9	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
3	48.0	32.8	64.5	7.6	22.8	18.0		0.0	0.0	3.1		0.0	0.2	0.0		
4	16.0	21.3	33.9	35.5	11.1	21.7	N	2.8	0.9	4.6	N	2.0	0.2	0.2	N	N
5	2.7	5.5	4.7	21.8	26.7	10.8	O	8.3	4.4	6.2	O	1.6	16.3	3.0	O	O
6	0.0	6.7	0.7	4.6	9.8	17.3		5.4	8.2	9.3		1.2	3.5	10.3		
7	0.0	0.6	1.8	0.7	1.3	12.1		7.4	3.5	6.2		4.8	4.4	2.4		
8	0.0	1.2	0.7	0.3	0.4	2.5	D	13.7	2.4	1.5	D	7.4	7.2	4.5	D	D
9	0.0	1.8	0.0	0.8	0.2	0.5	A	5.8	9.1	0.0	A	10.8	9.1	10.9	A	A
10	0.0	3.6	0.4	0.2	0.4	0.2	T	1.5	2.9	0.0	T	6.6	4.9	5.6	T	T
11	0.0	1.2	0.9	0.2	0.2	0.0	A	0.2	0.6	0.0	A	4.1	2.1	4.1	A	A
12	2.7	1.2	0.4	0.0	0.0	0.0		0.3	0.9	0.0		1.1	2.6	1.7		
13	0.0	0.6	0.2	0.0	0.2	0.2		0.1	0.0	0.0		0.2	0.5	0.4		
14	0.0	0.0	0.0	0.2	0.0	0.2		0.2	0.0	0.0		0.6	0.0	0.2		
15	0.0	0.6	0.2	0.0	0.2	0.0		0.0	0.0	0.0		0.1	0.0	0.0		
Total	133.3	83.3	110.9	72.0	74.2	83.6	0.0	45.7	32.9	30.9	0.0	39.9	51.1	43.2	0.0	0.0

Table 5-3.1. The estimated number of lake whitefish caught in gill nets in management area 5-3. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2		0	0	66	155	0	0	0	0	0	0	0	0	0	0	0
3		16,443	31,895	66	310	0	0	0	0	0	0	0	0	0	0	0
4	N	0	3,189	4,599	1,552	1,050	1,625	1,188	90	0	0	0	0	0	0	0
5	O	0	0	4,796	13,348	5,774	4,501	6,890	5,659	2,391	0	2,252	3,015	0	1,512	496
6		0	0	3,285	6,829	22,045	5,626	6,890	4,312	10,362	2,995	1,126	8,745	4,939	7,558	1,489
7		0	0	920	1,086	4,724	20,005	10,216	2,874	2,790	5,133	6,194	2,111	4,067	13,604	3,971
8	D	0	0	460	310	1,470	3,626	18,293	3,503	2,790	2,995	6,757	3,618	3,196	2,375	5,460
9	A	0	0	394	155	525	875	1,901	5,030	3,986	4,278	5,630	3,920	4,067	1,080	6,452
10	T	0	0	329	155	315	250	713	898	5,580	2,567	3,941	3,618	2,324	648	4,467
11	A	0	0	197	0	0	125	0	0	797	856	563	905	581	0	1,489
12		0	0	66	155	105	125	0	90	0	428	1,689	1,809	291	216	993
13		0	0	0	0	0	0	0	90	0	0	0	302	291	216	0
14		0	0	66	0	105	0	0	0	0	0	0	0	0	0	0
15		0	0	0	0	0	0	0	0	0	0	0	0	0	216	0
Total	0	16,443	35,084	15,243	24,058	36,112	36,759	46,089	22,546	28,696	19,250	28,152	28,043	19,755	27,425	24,817
Mean Age	--	3.00	3.09	5.46	5.41	6.11	6.67	7.00	7.06	7.54	8.13	8.24	7.78	7.96	7.00	8.62

Table 5-3.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 5-3. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2		0.0	0.0	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3		343.5	340.4	0.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	N	0.0	34.0	17.9	4.0	2.5	2.6	1.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	O	0.0	0.0	18.6	34.8	13.6	7.2	6.8	12.4	3.8	0.0	4.2	4.6	0.0	3.4	0.9
6		0.0	0.0	12.8	17.8	51.9	9.0	6.8	9.5	16.3	5.6	2.1	13.3	10.1	17.0	2.6
7		0.0	0.0	3.6	2.8	11.1	32.1	10.1	6.3	4.4	9.6	11.7	3.2	8.3	30.7	6.9
8	D	0.0	0.0	1.8	0.8	3.5	5.8	18.0	7.7	4.4	5.6	12.7	5.5	6.5	5.4	9.5
9	A	0.0	0.0	1.5	0.4	1.2	1.4	1.9	11.0	6.3	8.0	10.6	6.0	8.3	2.4	11.3
10	T	0.0	0.0	1.3	0.4	0.7	0.4	0.7	2.0	8.8	4.8	7.4	5.5	4.7	1.5	7.8
11	A	0.0	0.0	0.8	0.0	0.0	0.2	0.0	0.0	1.3	1.6	1.1	1.4	1.2	0.0	2.6
12		0.0	0.0	0.3	0.4	0.2	0.2	0.0	0.2	0.0	0.8	3.2	2.8	0.6	0.5	1.7
13		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.5	0.6	0.5	0.0
14		0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0
Total	0.0	343.5	374.4	59.2	62.8	85.0	58.9	45.4	49.5	45.1	36.0	53.0	42.6	40.3	61.8	43.4

Table 5-4.1. The estimated number of lake whitefish caught in gill nets in management area 5-4. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1			0		0	0	0	0	0	0	0	0				
2			0		0	0	0	0	0	0	0	0				
3			0		0	0	0	0	0	3	11	0				
4	N	N	4,773	N	0	0	478	222	0	9	886	418	N	N	N	N
5	O	O	1,507	O	753	730	1,004	1,554	0	15	246	1,784	O	O	O	O
6			0		1,923	2,555	1,577	370	0	18	64	276				
7			0		1,589	913	860	814	0	27	299	134				
8	D	D	0	D	84	183	1,386	1,110	0	9	278	126	D	D	D	D
9	A	A	0	A	0	183	621	444	0	37	128	118	A	A	A	A
10	T	T	0	T	0	0	239	370	0	24	235	142	T	T	T	T
11	A	A	0	A	0	0	0	370	0	12	171	87	A	A	A	A
12			0		0	0	48	0	2,055	6	53	24				
13			0		0	0	0	0	0	3	0	8				
14			0		0	0	48	0	0	0	0	0				
15			0		0	0	0	0	0	0	0	0				
Total	0	0	6,280	0	4,348	4,563	6,262	5,253	2,055	165	2,370	3,117	0	0	0	0
Mean Age	--	--	4.24	--	6.23	6.24	6.82	7.08	12.00	8.00	6.55	5.78	--	--	--	--

Table 5-4.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 5-4. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1			0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
2			0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
3			0.0		0.0	0.0	0.0	0.0	0.0	0.3	0.2	0.0				
4	N	N	32.1	N	0.0	0.0	4.9	2.7	0.0	1.0	17.7	6.1	N	N	N	N
5	O	O	10.2	O	9.7	14.1	10.4	18.7	0.0	1.6	4.9	25.9	O	O	O	O
6			0.0		24.7	49.3	16.3	4.4	0.0	1.9	1.3	4.0				
7			0.0		20.4	17.6	8.9	9.8	0.0	2.9	6.0	1.9				
8	D	D	0.0	D	1.1	3.5	14.3	13.3	0.0	1.0	5.5	1.8	D	D	D	D
9	A	A	0.0	A	0.0	3.5	6.4	5.3	0.0	3.8	2.6	1.7	A	A	A	A
10	T	T	0.0	T	0.0	0.0	2.5	4.4	0.0	2.6	4.7	2.1	T	T	T	T
11	A	A	0.0	A	0.0	0.0	0.0	4.4	0.0	1.3	3.4	1.3	A	A	A	A
12			0.0		0.0	0.0	0.5	0.0	41.8	0.6	1.1	0.3				
13			0.0		0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.1				
14			0.0		0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0				
15			0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total	0.0	0.0	42.3	0.0	55.8	88.0	64.8	63.1	41.8	17.3	47.3	45.2	0.0	0.0	0.0	0.0

Table 5-5.1. The estimated number of lake whitefish caught in gill nets in management area 5-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1			0		0	0	0	0	0	0	0	0				
2			0		0	0	0	0	88	0	0	0				
3			0		0	71	0	17	44	223	13	0				
4	N	N	4,638	N	153	964	725	198	220	497	3,172	788	N	N	N	N
5	O	O	3,289	O	766	1,856	1,836	3,036	1,320	1,113	1,093	4,355	O	O	O	O
6			337		4,292	3,319	1,836	2,079	1,936	1,336	661	649				
7			0		2,146	1,677	2,416	1,007	1,012	959	1,039	278				
8	D	D	84	D	307	571	1,981	594	836	223	945	371	D	D	D	D
9	A	A	0	A	0	36	242	578	836	514	432	324	A	A	A	A
10	T	T	0	T	0	71	97	132	880	377	553	232	T	T	T	T
11	A	A	0	A	0	0	0	50	264	223	297	139	A	A	A	A
12			0		0	0	0	0	88	34	175	139				
13			0		0	0	0	0	0	17	81	0				
14			0		0	0	0	0	0	17	13	0				
15			0		0	0	0	0	0	17	0	0				
Total	0	0	8,349	0	7,664	8,565	9,132	7,690	7,524	5,548	8,477	7,274	0	0	0	0
Mean Age	--	--	4.52	--	6.22	5.91	6.46	6.16	7.11	6.61	6.26	5.80	--	--	--	--

Table 5-5.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 5-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1			0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
2			0.0		0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0				
3			0.0		0.0	0.8	0.0	0.1	0.3	2.3	0.1	0.0				
4	N	N	22.7	N	1.1	10.2	4.5	1.6	1.5	5.0	18.4	7.9	N	N	N	N
5	O	O	16.1	O	5.3	19.7	11.3	25.1	9.1	11.3	6.3	43.4	O	O	O	O
6			1.7		29.6	35.2	11.3	17.2	13.3	13.5	3.8	6.5				
7			0.0		14.8	17.8	14.9	8.3	6.9	9.7	6.0	2.8				
8	D	D	0.4	D	2.1	6.1	12.2	4.9	5.7	2.3	5.5	3.7	D	D	D	D
9	A	A	0.0	A	0.0	0.4	1.5	4.8	5.7	5.2	2.5	3.2	A	A	A	A
10	T	T	0.0	T	0.0	0.8	0.6	1.1	6.0	3.8	3.2	2.3	T	T	T	T
11	A	A	0.0	A	0.0	0.0	0.0	0.4	1.8	2.3	1.7	1.4	A	A	A	A
12			0.0		0.0	0.0	0.0	0.0	0.6	0.3	1.0	1.4				
13			0.0		0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.0				
14			0.0		0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0				
15			0.0		0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0				
Total	0.0	0.0	40.9	0.0	52.8	90.9	56.3	63.5	51.6	56.2	49.2	72.5	0.0	0.0	0.0	0.0

Table 5-6.1. The estimated number of lake whitefish caught in gill nets in management area 5-6. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1			0	0	0	0	0	0	0	0	0	0	0	0	0	
2			0	73	21,366	61	109	0	0	0	0	0	0	0	0	
3			240	146	1,187	307	109	0	0	0	0	345	0	0	0	
4	N	N	0	4,540	1,187	920	1,254	2,324	980	537	1,140	691	102	99	0	N
5	O	O	0	3,148	8,309	8,522	1,799	7,138	10,943	2,685	380	5,873	1,433	592	840	O
6			0	1,025	5,935	17,167	2,780	2,905	7,350	5,191	1,519	2,418	2,150	5,431	2,520	
7			0	146	3,561	2,085	7,741	3,735	3,103	716	4,938	2,073	307	1,975	5,039	
8	D	D	0	73	1,187	1,226	981	7,221	1,960	1,074	3,039	3,800	614	691	420	D
9	A	A	0	0	0	61	273	332	6,043	716	1,329	345	819	395	0	A
10	T	T	0	0	0	61	0	332	653	1,432	1,899	345	409	395	420	T
11	A	A	0	0	0	0	0	83	327	0	760	0	614	395	210	A
12			0	0	0	0	0	0	163	0	0	1,036	512	99	0	
13			0	0	0	0	0	0	163	0	0	0	102	99	0	
14			0	0	0	0	0	0	0	0	0	0	0	0	0	
15			0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	240	9,152	42,732	30,409	15,046	24,070	31,686	12,352	15,004	16,929	7,063	10,171	9,449	0
Mean Age	--	--	3.00	4.62	3.81	5.78	6.36	6.38	6.59	6.57	7.58	6.59	7.54	6.84	6.82	--

Table 5-6.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 5-6. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2			0.0	0.3	63.3	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
3			143.6	0.6	3.5	0.7	0.3	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	
4	N	N	0.0	17.5	3.5	2.1	3.3	4.1	2.3	1.8	2.4	1.2	0.3	0.3	0.0	N
5	O	O	0.0	12.1	24.6	19.5	4.7	12.5	26.1	9.0	0.8	9.9	4.3	1.8	3.4	O
6			0.0	3.9	17.6	39.3	7.3	5.1	17.5	17.5	3.2	4.1	6.4	16.7	10.2	
7			0.0	0.6	10.5	4.8	20.2	6.5	7.4	2.4	10.5	3.5	0.9	6.1	20.3	
8	D	D	0.0	0.3	3.5	2.8	2.6	12.7	4.7	3.6	6.5	6.4	1.8	2.1	1.7	D
9	A	A	0.0	0.0	0.0	0.1	0.7	0.6	14.4	2.4	2.8	0.6	2.5	1.2	0.0	A
10	T	T	0.0	0.0	0.0	0.1	0.0	0.6	1.6	4.8	4.0	0.6	1.2	1.2	1.7	T
11	A	A	0.0	0.0	0.0	0.0	0.0	0.1	0.6	0.0	1.6	0.0	1.8	1.2	0.8	A
12			0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	1.7	1.5	0.3	0.0	
13			0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.3	0.3	0.0	
14			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total	0.0	0.0	143.6	35.2	126.5	69.6	39.3	42.2	75.5	41.6	32.0	28.4	21.2	31.3	38.1	0.0

Table 5-7.1. The estimated number of lake whitefish caught in gill nets in management area 5-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0				0		0	0	0	0	0	0	0	0	0	0
2	0				135,102		0	0	163	0	0	0	0	0	0	0
3	104				0		0	189	163	0	0	0	0	23	0	0
4	1,450	N	N	N	0	N	114	2,646	980	712	659	101	42	209	0	0
5	2,693	O	O	O	0	O	1,083	5,859	10,614	5,089	2,371	5,433	1,865	372	263	48
6	1,450				0		1,624	6,048	11,920	10,686	1,976	2,918	3,858	5,050	3,374	822
7	518				0		1,852	2,268	3,919	7,836	6,849	5,332	890	1,792	6,879	4,254
8	311	D	D	D	0	D	1,054	3,591	1,306	1,934	3,820	4,829	1,060	442	1,446	4,254
9	104	A	A	A	0	A	427	1,890	1,470	1,730	2,239	2,415	805	396	219	967
10	207	T	T	T	0	T	171	378	816	1,221	922	503	127	140	88	338
11	104	A	A	A	0	A	85	189	1,143	509	922	1,006	170	23	88	0
12	0				0		57	189	816	305	263	503	42	23	0	0
13	0				0		0	0	327	102	132	101	42	0	0	0
14	0				0		0	0	0	0	132	201	0	0	0	0
15	0				0		0	0	163	0	0	0	0	0	0	0
Total	6,941	0	0	0	135,102	0	6,468	23,248	33,802	30,125	20,285	23,341	8,903	8,471	12,356	10,684
Mean Age	5.55	--	--	--	2.00	--	6.83	6.30	6.44	6.68	7.45	7.24	6.60	6.45	6.89	7.59

Table 5-7.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 5-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0				0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0				1,063.7		0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	1.6				0.0		0.0	0.5	0.4	0.0	0.0	0.0	0.0	0.1	0.0	0.0
4	22.1	N	N	N	0.0	N	0.8	7.6	2.4	1.6	1.6	0.2	0.2	0.7	0.0	0.0
5	41.1	O	O	O	0.0	O	7.4	16.8	25.5	11.7	5.8	13.3	6.6	1.3	0.7	0.1
6	22.1				0.0		11.1	17.3	28.6	24.5	4.8	7.2	13.7	17.3	8.5	1.3
7	7.9				0.0		12.7	6.5	9.4	18.0	16.7	13.1	3.2	6.1	17.4	7.0
8	4.7	D	D	D	0.0	D	7.2	10.3	3.1	4.4	9.3	11.9	3.8	1.5	3.7	7.0
9	1.6	A	A	A	0.0	A	2.9	5.4	3.5	4.0	5.5	5.9	2.9	1.4	0.6	1.6
10	3.2	T	T	T	0.0	T	1.2	1.1	2.0	2.8	2.3	1.2	0.5	0.5	0.2	0.6
11	1.6	A	A	A	0.0	A	0.6	0.5	2.7	1.2	2.3	2.5	0.6	0.1	0.2	0.0
12	0.0				0.0		0.4	0.5	2.0	0.7	0.6	1.2	0.2	0.1	0.0	0.0
13	0.0				0.0		0.0	0.0	0.8	0.2	0.3	0.2	0.2	0.0	0.0	0.0
14	0.0				0.0		0.0	0.0	0.0	0.0	0.3	0.5	0.0	0.0	0.0	0.0
15	0.0				0.0		0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	105.9	0.0	0.0	0.0	1,063.7	0.0	44.4	66.5	81.2	69.2	49.6	57.3	31.7	29.0	31.3	17.5

Table 5-8.1. The estimated number of lake whitefish caught in gill nets in management area 5-8. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	606	0	0	0	0	0	0	0	0	0	
2	107	0	649	620	590	364	0	0	16	0	0	0	43	0	0	
3	19	93	185	52	904	1,576	82	349	63	0	615	56	1,605	0	0	
4	3,379	3,779	2,564	5,787	4,758	3,759	822	8,330	2,637	211	1,846	278	694	0	0	N
5	2,292	4,817	3,985	8,215	14,588	5,529	3,907	2,524	11,444	3,375	523	5,113	14,358	2,438	2,147	O
6	272	1,112	1,946	4,702	6,842	6,523	3,660	3,549	3,045	9,662	2,707	982	8,719	15,057	7,334	
7	223	148	463	2,222	3,578	2,716	6,086	2,831	1,884	1,266	5,906	3,038	2,039	2,725	22,897	
8	107	111	93	310	983	1,479	2,838	2,565	1,303	2,067	1,446	2,649	3,123	1,434	2,325	D
9	184	74	154	52	275	897	1,480	2,175	1,256	1,013	1,384	1,408	1,648	860	716	A
10	204	37	62	103	157	170	987	1,313	1,083	1,477	1,046	1,167	1,995	717	358	T
11	58	0	0	52	157	145	370	821	691	1,055	984	1,074	1,258	143	894	A
12	19	19	31	0	197	73	247	246	518	464	646	519	954	0	716	
13	19	0	0	52	0	97	123	103	63	295	308	185	260	143	179	
14	0	19	0	0	0	24	41	0	47	42	62	148	43	0	0	
15	0	0	0	0	0	24	82	41	47	42	0	37	43	0	0	
Total	6,884	10,207	10,133	22,166	33,030	23,983	20,726	24,846	24,097	20,970	17,473	16,653	36,784	23,518	37,565	0
Mean Age	4.96	4.86	4.94	5.17	5.39	5.54	6.95	6.25	6.14	7.02	7.29	7.36	6.41	6.44	7.04	--

Table 5-8.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 5-8. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
2	2.3	0.0	7.3	1.5	1.8	1.6	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0	
3	0.4	0.9	2.1	0.1	2.8	6.7	0.3	9.7	1.1	0.0	2.3	0.2	2.2	0.0	0.0	
4	72.5	35.5	28.8	14.4	14.5	16.1	3.0	230.6	48.2	0.9	6.8	0.9	1.0	0.0	0.0	N
5	49.2	45.2	44.8	20.5	44.5	23.6	14.3	69.9	209.4	14.7	1.9	16.9	19.8	3.7	2.6	O
6	5.8	10.4	21.9	11.7	20.9	27.9	13.4	98.3	55.7	42.2	10.0	3.2	12.0	23.0	8.8	
7	4.8	1.4	5.2	5.5	10.9	11.6	22.4	78.4	34.5	5.5	21.9	10.1	2.8	4.2	27.4	
8	2.3	1.0	1.0	0.8	3.0	6.3	10.4	71.0	23.8	9.0	5.4	8.8	4.3	2.2	2.8	D
9	4.0	0.7	1.7	0.1	0.8	3.8	5.4	60.2	23.0	4.4	5.1	4.7	2.3	1.3	0.9	A
10	4.4	0.3	0.7	0.3	0.5	0.7	3.6	36.4	19.8	6.4	3.9	3.9	2.8	1.1	0.4	T
11	1.3	0.0	0.0	0.1	0.5	0.6	1.4	22.7	12.6	4.6	3.7	3.6	1.7	0.2	1.1	A
12	0.4	0.2	0.3	0.0	0.6	0.3	0.9	6.8	9.5	2.0	2.4	1.7	1.3	0.0	0.9	
13	0.4	0.0	0.0	0.1	0.0	0.4	0.5	2.8	1.1	1.3	1.1	0.6	0.4	0.2	0.2	
14	0.0	0.2	0.0	0.0	0.0	0.1	0.2	0.0	0.9	0.2	0.2	0.5	0.1	0.0	0.0	
15	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.1	0.9	0.2	0.0	0.1	0.1	0.0	0.0	
Total	147.8	95.9	113.9	55.2	100.7	102.6	76.1	687.9	440.8	91.5	64.8	55.1	50.8	35.9	45.0	0.0

Table 5-9.1. The estimated number of lake whitefish caught in gill nets in management area 5-9. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0			0	0	0	0	0	0	0	0	0	0	0	0	0
2	121			154	34	0	0	0	0	0	0	0	0	0	0	0
3	0			0	134	1,046	464	230	0	132	43	0	333	0	0	0
4	6,120	N	N	2,534	2,217	4,336	1,724	15,742	6,818	728	1,536	1,311	0	0	0	0
5	9,059	O	O	13,439	9,405	8,826	10,408	8,140	23,946	8,144	1,835	15,157	8,329	3,198	572	325
6	1,611			9,216	9,002	5,658	8,353	6,527	8,315	17,447	8,151	2,253	22,542	40,955	13,927	10,733
7	725			4,147	3,057	2,860	7,955	3,532	1,663	4,701	11,095	6,759	3,665	9,962	47,887	17,780
8	242	D	D	1,152	2,217	1,292	3,712	2,764	1,330	2,814	3,883	5,080	3,720	1,845	6,678	11,058
9	242	A	A	154	504	1,199	1,922	1,152	998	1,722	2,518	2,581	1,999	615	382	759
10	40	T	T	77	202	154	729	691	1,164	1,523	1,110	1,352	944	246	191	325
11	40	A	A	0	0	0	530	307	0	695	982	1,311	888	615	382	0
12	0			0	67	62	66	230	0	497	768	533	222	369	191	0
13	40			0	0	31	0	230	0	33	213	287	500	123	191	0
14	0			0	0	0	0	0	0	99	85	123	56	0	0	0
15	0			0	34	31	0	0	0	33	43	0	0	0	0	0
Total	18,240	0	0	30,872	26,871	25,494	35,864	39,548	44,234	38,570	32,262	36,745	43,197	57,927	70,400	40,980
Mean Age	4.95	--	--	5.61	5.86	5.60	6.33	5.48	5.42	6.50	7.17	6.68	6.49	6.34	6.95	7.05

Table 5-9.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 5-9. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	1.2			0.7	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0			0.0	0.7	6.8	2.0	1.0	0.0	0.5	0.1	0.0	1.1	0.0	0.0	0.0
4	62.3	N	N	12.2	11.7	28.1	7.2	68.8	35.5	2.6	4.6	4.1	0.0	0.0	0.0	0.0
5	92.2	O	O	64.5	49.6	57.1	43.8	35.6	124.7	29.6	5.4	47.7	27.5	10.8	1.6	1.0
6	16.4			44.3	47.5	36.6	35.1	28.5	43.3	63.3	24.2	7.1	74.5	138.8	37.9	31.7
7	7.4			19.9	16.1	18.5	33.5	15.4	8.7	17.1	32.9	21.3	12.1	33.8	130.3	52.5
8	2.5	D	D	5.5	11.7	8.4	15.6	12.1	6.9	10.2	11.5	16.0	12.3	6.3	18.2	32.6
9	2.5	A	A	0.7	2.7	7.8	8.1	5.0	5.2	6.2	7.5	8.1	6.6	2.1	1.0	2.2
10	0.4	T	T	0.4	1.1	1.0	3.1	3.0	6.1	5.5	3.3	4.3	3.1	0.8	0.5	1.0
11	0.4	A	A	0.0	0.0	0.0	2.2	1.3	0.0	2.5	2.9	4.1	2.9	2.1	1.0	0.0
12	0.0			0.0	0.4	0.4	0.3	1.0	0.0	1.8	2.3	1.7	0.7	1.3	0.5	0.0
13	0.4			0.0	0.0	0.2	0.0	1.0	0.0	0.1	0.6	0.9	1.7	0.4	0.5	0.0
14	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.4	0.2	0.0	0.0	0.0
15	0.0			0.0	0.2	0.2	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Total	185.7	0.0	0.0	148.3	141.8	165.0	150.8	172.7	230.4	139.9	96.7	115.6	142.7	196.3	191.5	121.0

Table 6-1.1. The estimated number of lake whitefish caught in gill nets in management area 6-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	1,600	133	0	0	0	0	0	0	100	0	0	0	0	0	0	0
2	4,172	5,199	1,156	2,935	2,291	2,620	2,487	261	2,201	803	605	0	0	0	0	0
3	8,116	17,130	9,982	4,367	4,200	15,481	1,339	3,265	700	4,641	4,235	263	0	155	1,113	1,031
4	55,840	48,790	44,677	63,928	38,643	45,492	24,676	14,368	11,503	10,978	37,056	20,245	16,083	7,137	4,291	29,901
5	39,894	35,726	28,973	43,884	67,053	43,904	50,883	35,528	50,615	21,243	27,981	40,097	41,677	29,788	46,570	17,399
6	6,287	18,463	16,921	23,409	28,486	36,203	53,178	40,361	44,713	46,859	25,561	19,062	28,015	29,322	37,510	29,128
7	2,058	2,533	5,722	8,877	14,969	19,054	40,744	24,556	37,011	46,056	36,451	17,616	21,790	19,703	31,153	17,786
8	2,629	866	1,217	2,506	5,957	7,939	20,850	19,593	22,407	27,312	21,175	23,269	23,000	12,567	24,795	14,564
9	1,543	667	243	501	1,527	2,938	5,356	8,751	12,704	15,798	11,646	13,409	11,932	9,309	13,510	9,408
10	1,029	533	365	72	458	794	1,339	2,221	4,901	10,443	4,840	9,202	5,880	10,860	11,444	4,898
11	914	267	183	72	153	476	383	914	900	3,124	1,361	4,470	1,729	2,017	6,676	1,675
12	972	333	426	72	0	159	0	0	700	625	454	1,052	1,038	1,241	1,589	258
13	57	267	548	0	76	79	0	0	0	89	151	920	173	155	477	129
14	0	67	61	0	0	0	0	0	0	89	0	0	0	0	318	0
15	0	0	183	0	0	159	0	0	0	0	0	0	0	0	0	0
Total	125,110	130,974	110,658	150,622	163,814	175,298	201,235	149,819	188,457	188,060	171,514	149,606	151,317	122,253	179,445	126,177
Mean Age	4.61	4.53	4.80	4.80	5.20	5.20	5.96	6.19	6.34	6.80	6.15	6.63	6.46	6.74	6.88	6.20

Table 6-1.2. CPUE (number/km) for lake whitefish caught in gill nets in management area 6-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	1.6	1.8	0.5	1.5	1.2	1.2	1.0	0.1	1.3	0.3	0.2	0.0	0.0	0.0	0.0	0.0
3	3.1	5.9	4.2	2.2	2.2	7.3	0.5	1.8	0.4	1.9	1.3	0.1	0.0	0.1	0.4	0.3
4	21.0	16.9	18.7	32.5	20.3	21.3	9.7	8.0	7.0	4.5	11.4	7.0	5.3	2.7	1.4	9.9
5	15.0	12.4	12.1	22.3	35.3	20.6	20.0	19.9	31.0	8.7	8.6	13.9	13.8	11.2	14.9	5.7
6	2.4	6.4	7.1	11.9	15.0	17.0	20.9	22.6	27.4	19.2	7.9	6.6	9.2	11.1	12.0	9.6
7	0.8	0.9	2.4	4.5	7.9	8.9	16.0	13.7	22.6	18.9	11.2	6.1	7.2	7.4	10.0	5.9
8	1.0	0.3	0.5	1.3	3.1	3.7	8.2	10.9	13.7	11.2	6.5	8.1	7.6	4.7	7.9	4.8
9	0.6	0.2	0.1	0.3	0.8	1.4	2.1	4.9	7.8	6.5	3.6	4.6	3.9	3.5	4.3	3.1
10	0.4	0.2	0.2	0.0	0.2	0.4	0.5	1.2	3.0	4.3	1.5	3.2	1.9	4.1	3.7	1.6
11	0.3	0.1	0.1	0.0	0.1	0.2	0.2	0.5	0.6	1.3	0.4	1.5	0.6	0.8	2.1	0.6
12	0.4	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.4	0.3	0.1	0.4	0.3	0.5	0.5	0.1
13	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.1	0.2	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
15	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	47.1	45.5	46.2	76.5	86.2	82.1	79.1	83.7	115.3	77.0	52.8	51.9	49.9	46.1	57.4	41.6

Table 5-2.17. The estimated number of lake herring caught in gill nets in management area 5-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1					0	0		0				0	0			
2					71	0		0				0	0			
3					160	256		0				0	0			
4	N	N	N	N	550	427	N	180	N	N	N	0	204	N	N	N
5	O	O	O	O	728	727	O	360	O	O	O	67	204	O	O	O
6					408	641		450				133	204			
7					764	556		225				133	204			
8	D	D	D	D	479	556	D	90	D	D	D	133	204	D	D	D
9	A	A	A	A	426	598	A	45	A	A	A	133	102	A	A	A
10	T	T	T	T	195	85	T	45	T	T	T	0	0	T	T	T
11	A	A	A	A	160	0	A	0	A	A	A	0	0	A	A	A
12					107	0		0				0	0			
13					124	0		0				0	0			
14					18	0		0				0	0			
15					0	0		0				0	0			
Total	0	0	0	0	4,191	3,847	0	1,396	0	0	0	599	1,120	0	0	0
Mean Age	--	--	--	--	6.87	6.38	--	6.00	--	--	--	7.22	6.27	--	--	--

Table 5-2.18. CPUE (number/km) for lake herring caught in gill nets in management area 5-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1					0.0	0.0						0.0	0.0			
2					1.6	0.0						0.0	0.0			
3					3.7	9.1						0.0	0.0			
4	N	N	N	N	12.7	15.2	N	N	N	N	N	0.0	60.1	N	N	N
5	O	O	O	O	16.8	25.8	O	O	O	O	O	2.2	60.1	O	O	O
6					9.4	22.8						4.5	60.1			
7					17.6	19.7						4.5	60.1			
8	D	D	D	D	11.1	19.7	D	D	D	D	D	4.5	60.1	D	D	D
9	A	A	A	A	9.8	21.3	A	A	A	A	A	4.5	30.0	A	A	A
10	T	T	T	T	4.5	3.0	T	T	T	T	T	0.0	0.0	T	T	T
11	A	A	A	A	3.7	0.0	A	A	A	A	A	0.0	0.0	A	A	A
12					2.5	0.0						0.0	0.0			
13					2.9	0.0						0.0	0.0			
14					0.4	0.0						0.0	0.0			
15					0.0	0.0						0.0	0.0			
Total	0.0	0.0	0.0	0.0	96.8	136.6	0.0	0.0	0.0	0.0	0.0	20.1	330.5	0.0	0.0	0.0

Table 5-7.17. The estimated number of lake herring caught in gill nets in management area 5-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1								0			0	0	0	0		
2								0			0	0	0	220		
3								0			0	0	0	66		
4	N	N	N	N	N	N	N	0	N	N	840	0	72	66	N	N
5	O	O	O	O	O	O	O	0	O	O	0	288	287	286	O	O
6								0			0	96	669	264		
7								0			0	0	191	176		
8	D	D	D	D	D	D	D	194	D	D	0	0	48	44	D	D
9	A	A	A	A	A	A	A	0	A	A	0	96	24	0	A	A
10	T	T	T	T	T	T	T	0	T	T	0	0	0	0	T	T
11	A	A	A	A	A	A	A	194	A	A	0	0	0	0	A	A
12								0			0	0	0	0		
13								0			0	0	0	0		
14								0			0	0	0	0		
15								0			0	0	0	0		
Total	0	0	0	0	0	0	0	388	0	0	840	480	1,290	1,121	0	0
Mean Age	--	--	--	--	--	--	--	9.50	--	--	4.00	6.00	5.94	4.90	--	--

Table 5-7.18. CPUE (number/km) for lake herring caught in gill nets in management area 5-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1											0.0	0.0		0.0		
2											0.0	0.0		16.5		
3											0.0	0.0		5.0		
4	N	N	N	N	N	N	N	N	N	N	92.9	0.0	N	5.0	N	N
5	O	O	O	O	O	O	O	O	O	O	0.0	56.8	O	21.5	O	O
6											0.0	18.9		19.8		
7											0.0	0.0		13.2		
8	D	D	D	D	D	D	D	D	D	D	0.0	0.0	D	3.3	D	D
9	A	A	A	A	A	A	A	A	A	A	0.0	18.9	A	0.0	A	A
10	T	T	T	T	T	T	T	T	T	T	0.0	0.0	T	0.0	T	T
11	A	A	A	A	A	A	A	A	A	A	0.0	0.0	A	0.0	A	A
12											0.0	0.0		0.0		
13											0.0	0.0		0.0		
14											0.0	0.0		0.0		
15											0.0	0.0		0.0		
Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92.9	94.6	0.0	84.2	0.0	0.0

Table 6-1.17. The estimated number of lake herring caught in gill nets in management area 6-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1		0						0			0	0	0		0	0
2		0						0			0	0	0		829	0
3		0						0			0	1,213	0		0	0
4	N	0	N	N	N	N	N	625	N	N	1,840	809	0	N	829	8,851
5	O	0	O	O	O	O	O	1,875	O	O	920	1,618	0	O	829	0
6		0						2,499			3,220	5,257	0		1,658	0
7		0						1,250			4,139	2,831	0		3,317	0
8	D	0	D	D	D	D	D	1,250	D	D	2,760	2,022	0	D	4,146	8,851
9	A	4,962	A	A	A	A	A	0	A	A	1,840	809	0	A	2,487	0
10	T	4,962	T	T	T	T	T	0	T	T	0	0	0	T	829	0
11	A	0	A	A	A	A	A	0	A	A	0	0	12,729	A	829	0
12		0						0			0	0	0		4,146	0
13		0						0			0	0	0		0	0
14		0						0			0	0	0		0	0
15		0						0			0	0	0		0	0
Total	0	9,924	0	0	0	0	0	7,498	0	0	14,718	14,559	12,729	0	19,900	17,703
Mean Age	--	9.50	--	--	--	--	--	6.08	--	--	6.72	6.17	11.00	--	8.29	6.00

Table 6-1.18. CPUE (number/km) for lake herring caught in gill nets in management area 6-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1		0.0						0.0			0.0	0.0				0.0
2		0.0						0.0			0.0	0.0				0.0
3		0.0						0.0			0.0	16.9				0.0
4	N	0.0	N	N	N	N	N	11.1	N	N	14.5	11.2	N	N	N	706.2
5	O	0.0	O	O	O	O	O	33.4	O	O	7.2	22.5	O	O	O	0.0
6		0.0						44.5			25.3	73.1				0.0
7		0.0						22.3			32.5	39.3				0.0
8	D	0.0	D	D	D	D	D	22.3	D	D	21.7	28.1	D	D	D	706.2
9	A	29.4	A	A	A	A	A	0.0	A	A	14.5	11.2	A	A	A	0.0
10	T	29.4	T	T	T	T	T	0.0	T	T	0.0	0.0	T	T	T	0.0
11	A	0.0	A	A	A	A	A	0.0	A	A	0.0	0.0	A	A	A	0.0
12		0.0						0.0			0.0	0.0				0.0
13		0.0						0.0			0.0	0.0				0.0
14		0.0						0.0			0.0	0.0				0.0
15		0.0						0.0			0.0	0.0				0.0
Total	0.0	58.8	0.0	0.0	0.0	0.0	0.0	133.6	0.0	0.0	115.6	202.3	0.0	0.0	0.0	1,412.4

Table 4-1.5. The estimated number of chub caught in gill nets in management area 4-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0		0											
2	0	0	0		0											
3	111	0	774		0											
4	1,660	1,412	4,645	N	554	N	N	N	N	N	N	N	N	N	N	N
5	1,328	2,219	774	O	3,327	O	O	O	O	O	O	O	O	O	O	O
6	3,874	6,252	10,065		8,871											
7	11,954	10,085	19,356		10,535											
8	12,728	19,161	28,647	D	9,980	D	D	D	D	D	D	D	D	D	D	D
9	10,515	20,371	25,550	A	3,604	A	A	A	A	A	A	A	A	A	A	A
10	3,320	8,471	10,839	T	1,663	T	T	T	T	T	T	T	T	T	T	T
11	443	2,219	2,323	A	0	A	A	A	A	A	A	A	A	A	A	A
12	111	202	2,323		0											
13	0	0	774		0											
14	111	0	0		0											
15	0	0	0		0											
Total	46,155	70,390	106,070	0	38,535	0	0	0	0	0	0	0	0	0	0	0
Mean Age	7.76	8.14	8.03	--	7.13	--	--	--	--	--	--	--	--	--	--	--

Table 4-1.6. CPUE (number/km) for chub caught in gill nets in management area 4-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0		0.0											
2	0.0	0.0	0.0		0.0											
3	0.9	0.0	2.7		0.0											
4	13.2	7.0	16.3	N	5.0	N	N	N	N	N	N	N	N	N	N	N
5	10.6	11.0	2.7	O	29.9	O	O	O	O	O	O	O	O	O	O	O
6	30.8	30.9	35.4		79.8											
7	95.1	49.9	68.1		94.8											
8	101.3	94.8	100.8	D	89.8	D	D	D	D	D	D	D	D	D	D	D
9	83.7	100.8	89.9	A	32.4	A	A	A	A	A	A	A	A	A	A	A
10	26.4	41.9	38.1	T	15.0	T	T	T	T	T	T	T	T	T	T	T
11	3.5	11.0	8.2	A	0.0	A	A	A	A	A	A	A	A	A	A	A
12	0.9	1.0	8.2		0.0											
13	0.0	0.0	2.7		0.0											
14	0.9	0.0	0.0		0.0											
15	0.0	0.0	0.0		0.0											
Total	367.2	348.2	373.3	0.0	346.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-2.5. The estimated number of chub caught in gill nets in management area 4-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0	0			0						
2	0	0	0	0	0	0	0			0						
3	802	434	350	0	0	912	0			0						
4	12,838	3,254	1,399	0	1,421	3,649	22,432	N	N	0	N	N	N	N	N	N
5	10,698	10,197	10,142	2,598	7,106	15,507	83,318	O	O	115	O	O	O	O	O	O
6	31,826	24,732	47,911	17,241	18,476	49,259	57,682			115						
7	63,653	57,275	57,703	36,845	46,899	66,591	48,068			204						
8	56,967	58,793	60,501	37,789	28,898	60,205	9,614	D	D	127	D	D	D	D	D	D
9	22,198	40,136	43,715	24,091	20,370	28,278	3,205	A	A	64	A	A	A	A	A	A
10	5,349	14,102	14,688	8,739	7,580	8,210	0	T	T	13	T	T	T	T	T	T
11	0	1,519	4,197	3,070	1,421	1,824	0	A	A	0	A	A	A	A	A	A
12	267	434	0	236	0	0	0			0						
13	0	0	350	0	0	0	0			0						
14	0	0	0	0	0	0	0			0						
15	0	0	0	0	0	0	0			0						
Total	204,599	210,875	240,955	130,610	132,171	234,435	224,319	0	0	637	0	0	0	0	0	0
Mean Age	7.12	7.63	7.57	7.79	7.46	7.23	5.77	--	--	6.92	--	--	--	--	--	--

Table 4-2.6. CPUE (number/km) for chub caught in gill nets in management area 4-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0						
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0						
3	1.5	0.6	0.5	0.0	0.0	1.2	0.0			0.0						
4	24.4	4.9	2.2	0.0	4.0	4.7	42.2	N	N	0.0	N	N	N	N	N	N
5	20.3	15.2	15.8	6.0	20.2	20.1	156.7	O	O	5.2	O	O	O	O	O	O
6	60.4	37.0	74.7	39.7	52.4	63.9	108.5			5.2						
7	120.9	85.7	89.9	84.8	133.0	86.3	90.4			9.2						
8	108.2	87.9	94.3	87.0	82.0	78.1	18.1	D	D	5.8	D	D	D	D	D	D
9	42.2	60.0	68.1	55.5	57.8	36.7	6.0	A	A	2.9	A	A	A	A	A	A
10	10.2	21.1	22.9	20.1	21.5	10.6	0.0	T	T	0.6	T	T	T	T	T	T
11	0.0	2.3	6.5	7.1	4.0	2.4	0.0	A	A	0.0	A	A	A	A	A	A
12	0.5	0.6	0.0	0.5	0.0	0.0	0.0			0.0						
13	0.0	0.0	0.5	0.0	0.0	0.0	0.0			0.0						
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0						
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0						
Total	388.6	315.4	375.5	300.7	374.8	303.9	421.9	0.0	0.0	28.8	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-3.5. The estimated number of chub caught in gill nets in management area 4-3. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0	0	0	0				0			
2	0	0	0	0	0	0	0	0	0				0			
3	560	320	405	0	895	489	0	0	0				0			
4	3,639	4,806	4,055	4,699	2,237	4,398	2,671	3,598	0	N	N	N	0	N	N	N
5	3,079	19,543	30,409	14,566	14,314	25,412	8,012	21,589	0	O	O	O	0	O	O	O
6	21,273	29,475	70,144	53,094	33,995	68,417	24,035	55,771	179				1,271			
7	40,587	59,910	86,767	62,981	67,095	76,236	53,412	59,389	967				0			
8	29,671	73,046	80,685	73,298	61,280	43,005	50,741	61,168	1,611	D	D	D	0	D	D	D
9	20,714	40,047	47,033	35,239	29,075	11,240	32,047	25,187	1,325	A	A	A	0	A	A	A
10	2,519	11,854	16,624	10,807	6,262	3,421	13,353	7,196	644	T	T	T	0	T	T	T
11	840	961	2,027	2,349	895	977	0	0	251	A	A	A	0	A	A	A
12	0	0	0	940	0	0	0	0	0				0			
13	0	0	0	0	0	0	2,671	0	0				0			
14	0	0	0	0	0	0	0	0	0				0			
15	0	0	0	0	0	0	0	0	0				0			
Total	122,882	239,962	338,149	257,951	216,047	233,596	186,942	233,877	4,977	0	0	0	1,271	0	0	0
Mean Age	7.34	7.45	7.26	7.36	7.32	6.77	7.66	7.10	8.41	--	--	--	6.00	--	--	--

Table 4-3.6. CPUE (number/km) for chub caught in gill nets in management area 4-3. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
3	1.9	0.5	0.5	0.0	1.3	1.0	0.0	0.0	0.0							
4	12.0	8.1	5.4	7.3	3.1	8.7	8.6	4.4	0.0	N	N	N	N	N	N	N
5	10.2	32.9	40.4	22.7	20.0	50.0	25.8	26.3	0.0	O	O	O	O	O	O	O
6	70.4	49.6	93.3	82.6	47.5	134.6	77.3	68.0	3.4							
7	134.4	100.9	115.4	98.0	93.8	150.0	171.8	72.4	18.2							
8	98.2	123.0	107.3	114.1	85.7	84.6	163.2	74.6	30.3	D	D	D	D	D	D	D
9	68.6	67.4	62.5	54.9	40.7	22.1	103.1	30.7	24.9	A	A	A	A	A	A	A
10	8.3	20.0	22.1	16.8	8.8	6.7	43.0	8.8	12.1	T	T	T	T	T	T	T
11	2.8	1.6	2.7	3.7	1.3	1.9	0.0	0.0	4.7	A	A	A	A	A	A	A
12	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0							
13	0.0	0.0	0.0	0.0	0.0	0.0	8.6	0.0	0.0							
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
Total	406.9	404.0	449.7	401.5	302.1	459.6	601.3	285.3	93.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-4.5. The estimated number of chub caught in gill nets in management area 4-4. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0		0								
2	0	431	0	0	0	0		0								
3	2,521	1,725	453	844	0	2,389		0								
4	24,367	13,369	9,056	6,473	900	23,887	N	0	N	N	N	N	N	N	N	N
5	36,970	60,808	75,168	52,626	8,233	181,541	O	4,739	O	O	O	O	O	O	O	O
6	146,620	119,029	166,637	143,526	37,948	265,145		28,437								
7	297,861	225,120	177,505	155,909	60,460	286,643		127,965								
8	231,483	231,589	176,146	102,157	44,252	198,262	D	213,275	D	D	D	D	D	D	D	D
9	60,917	107,385	75,168	42,776	17,881	62,106	A	194,317	A	A	A	A	A	A	A	A
10	10,923	34,070	30,339	9,568	6,561	9,555	T	66,352	T	T	T	T	T	T	T	T
11	420	7,332	3,623	3,096	1,286	4,777	A	14,218	A	A	A	A	A	A	A	A
12	0	2,156	453	0	0	0		0								
13	420	0	453	0	0	0		4,739								
14	0	0	0	0	0	0		0								
15	0	0	0	0	0	0		0								
Total	812,500	803,015	714,999	516,975	177,521	1,034,305	0	654,042	0	0	0	0	0	0	0	0
Mean Age	7.11	7.37	7.13	6.92	7.27	6.67	--	8.30	--	--	--	--	--	--	--	--

Table 4-4.6. CPUE (number/km) for chub caught in gill nets in management area 4-4. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0		0.0								
2	0.0	0.4	0.0	0.0	0.0	0.0		0.0								
3	2.5	1.7	0.5	1.0	0.0	17.0		0.0								
4	24.6	12.8	10.0	7.4	3.2	170.2	N	0.0	N	N	N	N	N	N	N	N
5	37.4	58.3	83.3	60.0	29.6	1,293.8	O	4.2	O	O	O	O	O	O	O	O
6	148.2	114.1	184.6	163.7	136.5	1,889.7		25.0								
7	301.0	215.8	196.6	177.9	217.4	2,042.9		112.7								
8	233.9	222.0	195.1	116.5	159.1	1,413.0	D	187.9	D	D	D	D	D	D	D	D
9	61.6	103.0	83.3	48.8	64.3	442.6	A	171.2	A	A	A	A	A	A	A	A
10	11.0	32.7	33.6	10.9	23.6	68.1	T	58.4	T	T	T	T	T	T	T	T
11	0.4	7.0	4.0	3.5	4.6	34.0	A	12.5	A	A	A	A	A	A	A	A
12	0.0	2.1	0.5	0.0	0.0	0.0		0.0								
13	0.4	0.0	0.5	0.0	0.0	0.0		4.2								
14	0.0	0.0	0.0	0.0	0.0	0.0		0.0								
15	0.0	0.0	0.0	0.0	0.0	0.0		0.0								
Total	821.1	769.9	792.0	589.8	638.4	7,371.4	0.0	576.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-5.5. The estimated number of chub caught in gill nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0	0				0	0	0			
2	0	568	0	0	468	571	0				2,690	0	194			
3	920	1,136	999	2,531	2,810	5,138	0				5,680	3,194	1,551			
4	1,379	2,273	3,748	12,024	12,646	16,557	755	N	N	N	7,175	10,646	2,521	N	N	N
5	3,218	13,638	12,244	26,263	29,977	38,824	2,643	O	O	O	11,061	12,775	5,042	O	O	O
6	14,253	29,548	21,489	43,666	65,574	71,367	5,285				18,534	20,228	3,297			
7	38,622	50,573	40,979	50,627	57,143	110,191	3,775				14,947	5,323	1,357			
8	58,852	61,369	48,225	28,478	25,761	63,374	566	D	D	D	7,175	1,065	0	D	D	D
9	38,162	31,821	22,738	10,125	10,773	25,121	189	A	A	A	2,093	0	194	A	A	A
10	4,598	10,228	3,748	1,266	1,874	9,706	0	T	T	T	0	0	0	T	T	T
11	0	568	1,249	0	0	1,142	0	A	A	A	299	0	0	A	A	A
12	0	0	500	0	0	0	0				0	0	0			
13	0	0	0	0	0	1,142	0				0	0	0			
14	0	0	0	0	0	0	0				0	0	0			
15	0	0	0	0	0	0	0				0	0	0			
Total	160,004	201,723	155,919	174,979	207,027	343,132	13,213	0	0	0	69,654	53,231	14,156	0	0	0
Mean Age	7.75	7.43	7.33	6.49	6.40	6.80	6.10	--	--	--	5.77	5.32	5.04	--	--	--

Table 4-5.6. CPUE (number/km) for chub caught in gill nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0			
2	0.0	2.9	0.0	0.0	2.8	1.3	0.0				25.1	0.0	6.2			
3	4.4	5.8	3.8	16.2	16.6	12.0	0.0				53.0	35.5	49.6			
4	6.6	11.6	14.2	77.1	74.5	38.7	27.2	N	N	N	66.9	118.3	80.6	N	N	N
5	15.4	69.6	46.3	168.4	176.6	90.8	95.2	O	O	O	103.2	141.9	161.1	O	O	O
6	68.3	150.8	81.2	280.0	386.4	166.9	190.3				172.9	224.7	105.3			
7	184.9	258.1	154.9	324.6	336.7	257.7	135.9				139.4	59.1	43.4			
8	281.8	313.2	182.3	182.6	151.8	148.2	20.4	D	D	D	66.9	11.8	0.0	D	D	D
9	182.7	162.4	85.9	64.9	63.5	58.8	6.8	A	A	A	19.5	0.0	6.2	A	A	A
10	22.0	52.2	14.2	8.1	11.0	22.7	0.0	T	T	T	0.0	0.0	0.0	T	T	T
11	0.0	2.9	4.7	0.0	0.0	2.7	0.0	A	A	A	2.8	0.0	0.0	A	A	A
12	0.0	0.0	1.9	0.0	0.0	0.0	0.0				0.0	0.0	0.0			
13	0.0	0.0	0.0	0.0	0.0	2.7	0.0				0.0	0.0	0.0			
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0			
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0			
Total	766.2	1,029.5	589.3	1,121.9	1,219.9	802.6	475.8	0.0	0.0	0.0	649.7	591.3	452.3	0.0	0.0	0.0

Table 4-7.5. The estimated number of chub caught in gill nets in management area 4-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0											
2	0	0	0	0	0											
3	0	273	519	638	0											
4	0	273	1,556	3,828	1,414	N	N	N	N	N	N	N	N	N	N	N
5	4,463	7,368	8,299	22,331	10,181	O	O	O	O	O	O	O	O	O	O	O
6	13,388	26,199	39,937	56,146	19,514											
7	51,639	53,763	56,534	77,839	25,735											
8	48,451	72,866	58,608	73,692	13,575	D	D	D	D	D	D	D	D	D	D	D
9	12,113	32,749	35,787	37,325	5,656	A	A	A	A	A	A	A	A	A	A	A
10	2,550	13,645	15,041	11,804	1,697	T	T	T	T	T	T	T	T	T	T	T
11	638	1,637	1,037	3,190	0	A	A	A	A	A	A	A	A	A	A	A
12	0	546	0	0	0											
13	0	0	0	319	0											
14	0	0	0	0	0											
15	0	0	0	0	0											
Total	133,241	209,319	217,318	287,112	77,772	0	0	0	0	0	0	0	0	0	0	0
Mean Age	7.45	7.70	7.53	7.29	6.82	--	--	--	--	--	--	--	--	--	--	--

Table 4-7.6. CPUE (number/km) for chub caught in gill nets in management area 4-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0											
2	0.0	0.0	0.0	0.0	0.0											
3	0.0	0.6	1.1	0.7	0.0											
4	0.0	0.6	3.2	4.5	6.0	N	N	N	N	N	N	N	N	N	N	N
5	17.7	15.7	17.0	26.1	42.9	O	O	O	O	O	O	O	O	O	O	O
6	53.2	55.7	81.6	65.7	82.2											
7	205.1	114.2	115.5	91.0	108.4											
8	192.4	154.8	119.7	86.2	57.2	D	D	D	D	D	D	D	D	D	D	D
9	48.1	69.6	73.1	43.7	23.8	A	A	A	A	A	A	A	A	A	A	A
10	10.1	29.0	30.7	13.8	7.1	T	T	T	T	T	T	T	T	T	T	T
11	2.5	3.5	2.1	3.7	0.0	A	A	A	A	A	A	A	A	A	A	A
12	0.0	1.2	0.0	0.0	0.0											
13	0.0	0.0	0.0	0.4	0.0											
14	0.0	0.0	0.0	0.0	0.0											
15	0.0	0.0	0.0	0.0	0.0											
Total	529.1	444.7	443.9	335.8	327.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 5-2.5. The estimated number of chub caught in gill nets in management area 5-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1		0	0	0	0	0		0				0				
2		0	0	0	0	0		0				0				
3		0	337	468	0	183		771				1				
4	N	597	2,361	2,275	0	549	N	1,542	N	N	N	3	N	N	N	N
5	O	4,177	9,108	6,625	600	5,670	O	5,782	O	O	O	1	O	O	O	O
6		6,564	16,530	19,473	1,799	17,009		19,274				1				
7		15,813	22,096	18,469	13,592	26,702		23,899				1				
8	D	11,338	13,831	8,833	27,185	25,422	D	28,525	D	D	D	0	D	D	D	D
9	A	6,564	6,916	2,476	19,989	8,413	A	17,732	A	A	A	0	A	A	A	A
10	T	1,790	2,699	602	8,995	2,560	T	8,095	T	T	T	0	T	T	T	T
11	A	597	843	0	1,799	0	A	385	A	A	A	0	A	A	A	A
12		0	0	0	400	0		0				0				
13		0	0	0	0	0		0				0				
14		0	0	0	0	0		0				0				
15		0	0	0	0	0		0				0				
Total	0	47,440	74,723	59,223	74,358	86,508	0	106,005	0	0	0	9	0	0	0	0
Mean Age	--	7.33	6.95	6.56	8.35	7.22	--	7.48	--	--	--	4.83	--	--	--	--

Table 5-2.6. CPUE (number/km) for chub caught in gill nets in management area 5-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1		0.0	0.0	0.0	0.0	0.0		0.0								
2		0.0	0.0	0.0	0.0	0.0		0.0								
3		0.0	2.8	3.6	0.0	1.0		3.6								
4	N	5.1	19.8	17.4	0.0	3.0	N	7.2	N	N	N	N	N	N	N	N
5	O	35.6	76.3	50.7	3.1	31.1	O	27.1	O	O	O	O	O	O	O	O
6		56.0	138.6	149.0	9.4	93.3		90.4								
7		134.9	185.2	141.3	71.2	146.5		112.1								
8	D	96.7	115.9	67.6	142.5	139.5	D	133.8	D	D	D	D	D	D	D	D
9	A	56.0	58.0	18.9	104.8	46.2	A	83.2	A	A	A	A	A	A	A	A
10	T	15.3	22.6	4.6	47.1	14.0	T	38.0	T	T	T	T	T	T	T	T
11	A	5.1	7.1	0.0	9.4	0.0	A	1.8	A	A	A	A	A	A	A	A
12		0.0	0.0	0.0	2.1	0.0		0.0								
13		0.0	0.0	0.0	0.0	0.0		0.0								
14		0.0	0.0	0.0	0.0	0.0		0.0								
15		0.0	0.0	0.0	0.0	0.0		0.0								
Total	0.0	404.6	626.3	453.2	389.8	474.7	0.0	497.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 5-3.5. The estimated number of chub caught in gill nets in management area 5-3. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0		0	0							
2	0	0	0	0	0	2,329		0	0							
3	0	0	2,450	1,384	0	4,658		0	0							
4	5,475	7,763	14,700	33,227	13,292	27,946	N	1,257	0	N	N	N	N	N	N	N
5	21,901	34,933	75,948	76,146	67,410	125,759	O	5,027	0	O	O	O	O	O	O	O
6	91,252	98,978	198,443	218,747	180,392	246,860		26,393	8,592							
7	197,105	206,689	269,491	311,507	231,662	263,162		76,038	20,048							
8	190,717	245,504	237,642	213,209	154,758	107,128	D	98,033	22,913	D	D	D	D	D	D	D
9	63,876	131,971	173,944	94,144	56,966	27,946	A	62,213	16,230	A	A	A	A	A	A	A
10	913	31,052	36,749	16,614	15,191	9,315	T	40,847	15,275	T	T	T	T	T	T	T
11	0	4,852	9,800	1,384	949	0	A	9,426	0	A	A	A	A	A	A	A
12	0	0	0	0	1,899	0		6,284	3,819							
13	0	970	0	0	0	0		0	0							
14	0	0	0	0	0	0		0	0							
15	0	0	0	0	0	0		0	0							
Total	571,238	762,713	1,019,166	966,363	722,519	815,103	0	325,520	86,877	0	0	0	0	0	0	0
Mean Age	7.30	7.57	7.32	6.98	6.96	6.48	--	8.15	8.29	--	--	--	--	--	--	--

Table 5-3.6. CPUE (number/km) for chub caught in gill nets in management area 5-3. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0							
2	0.0	0.0	0.0	0.0	0.0	1.0		0.0	0.0							
3	0.0	0.0	0.9	0.5	0.0	2.1		0.0	0.0							
4	3.1	3.3	5.7	11.2	5.9	12.6	N	1.1	0.0	N	N	N	N	N	N	N
5	12.5	14.7	29.2	25.7	30.0	56.5	O	4.5	0.0	O	O	O	O	O	O	O
6	52.3	41.7	76.4	73.9	80.2	110.9		23.8	10.8							
7	112.9	87.0	103.8	105.3	103.0	118.2		68.6	25.1							
8	109.2	103.3	91.5	72.0	68.8	48.1	D	88.5	28.7	D	D	D	D	D	D	D
9	36.6	55.5	67.0	31.8	25.3	12.6	A	56.1	20.3	A	A	A	A	A	A	A
10	0.5	13.1	14.1	5.6	6.8	4.2	T	36.9	19.1	T	T	T	T	T	T	T
11	0.0	2.0	3.8	0.5	0.4	0.0	A	8.5	0.0	A	A	A	A	A	A	A
12	0.0	0.0	0.0	0.0	0.8	0.0		5.7	4.8							
13	0.0	0.4	0.0	0.0	0.0	0.0		0.0	0.0							
14	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0							
15	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0							
Total	327.1	321.0	392.4	326.6	321.1	366.2	0.0	293.7	108.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 5-5.5. The estimated number of chub caught in gill nets in management area 5-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0		0		0	0	0	0			0					
2	0		0		0	0	0	0			0					
3	0		0		0	650	0	0			0					
4	0	N	1,638	N	853	2,924	2,932	0	N	N	3	N	N	N	N	N
5	1,696	O	8,189	O	6,820	20,793	13,196	1,506	O	O	28	O	O	O	O	O
6	16,964		31,117		14,493	45,484	25,658	7,531			46					
7	61,072		25,385		27,282	39,961	32,256	19,579			21					
8	37,322	D	11,464	D	18,472	17,544	9,530	15,061	D	D	31	D	D	D	D	D
9	1,696	A	3,275	A	6,536	6,173	5,132	5,271	A	A	9	A	A	A	A	A
10	0	T	0	T	1,137	1,624	1,466	753	T	T	0	T	T	T	T	T
11	0	A	819	A	284	1,624	733	0	A	A	0	A	A	A	A	A
12	0		0		0	650	0	753			0					
13	0		0		0	650	0	0			0					
14	0		0		0	0	0	0			0					
15	0		0		0	0	0	0			0					
Total	118,750	0	81,886	0	75,877	138,076	90,903	50,455	0	0	138	0	0	0	0	0
Mean Age	7.17	--	6.62	--	7.07	6.64	6.63	7.42	--	--	6.56	--	--	--	--	--

Table 5-5.6. CPUE (number/km) for chub caught in gill nets in management area 5-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0		0.0		0.0	0.0	0.0	0.0			0.0					
2	0.0		0.0		0.0	0.0	0.0	0.0			0.0					
3	0.0		0.0		0.0	1.4	0.0	0.0			0.0					
4	0.0	N	3.9	N	2.3	6.2	8.4	0.0	N	N	0.9	N	N	N	N	N
5	4.6	O	19.4	O	18.1	44.3	37.9	9.3	O	O	8.4	O	O	O	O	O
6	45.9		73.7		38.5	96.9	73.6	46.6			14.0					
7	165.4		60.1		72.6	85.1	92.6	121.1			6.5					
8	101.1	D	27.2	D	49.1	37.4	27.4	93.2	D	D	9.3	D	D	D	D	D
9	4.6	A	7.8	A	17.4	13.2	14.7	32.6	A	A	2.8	A	A	A	A	A
10	0.0	T	0.0	T	3.0	3.5	4.2	4.7	T	T	0.0	T	T	T	T	T
11	0.0	A	1.9	A	0.8	3.5	2.1	0.0	A	A	0.0	A	A	A	A	A
12	0.0		0.0		0.0	1.4	0.0	4.7			0.0					
13	0.0		0.0		0.0	1.4	0.0	0.0			0.0					
14	0.0		0.0		0.0	0.0	0.0	0.0			0.0					
15	0.0		0.0		0.0	0.0	0.0	0.0			0.0					
Total	321.5	0.0	194.0	0.0	201.8	294.2	260.9	312.1	0.0	0.0	41.9	0.0	0.0	0.0	0.0	0.0

Table 5-6.5. The estimated number of chub caught in gill nets in management area 5-6. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0	0	0	0	0	0					
2	0	0	0	0	0	0	0	0	843	0	0					
3	0	0	0	2,128	672	3,053	0	0	843	1,894	529					
4	0	962	9,883	4,256	3,695	12,213	13,560	2,380	2,529	10,606	1,058	N	N	N	N	N
5	2,982	9,623	27,367	26,953	29,893	94,649	59,453	14,282	20,235	17,425	2,644	O	O	O	O	O
6	37,269	30,793	57,015	47,523	65,161	134,341	95,960	38,086	46,372	20,076	3,400					
7	80,502	57,736	82,102	53,906	73,894	106,862	88,659	57,129	60,705	17,425	2,040					
8	67,085	57,736	44,852	43,267	50,046	64,117	21,904	32,532	53,960	6,439	756	D	D	D	D	D
9	19,380	34,642	6,082	14,895	13,435	3,053	5,215	17,456	20,235	1,894	151	A	A	A	A	A
10	0	8,660	760	2,128	4,702	0	3,129	3,967	10,961	379	0	T	T	T	T	T
11	0	1,925	1,520	1,419	672	0	0	793	843	0	0	A	A	A	A	A
12	0	0	0	0	0	0	0	0	1,686	0	0					
13	0	0	0	0	0	0	0	0	0	0	0					
14	0	0	0	0	0	0	0	0	0	0	0					
15	0	0	0	0	0	0	0	0	0	0	0					
Total	207,217	202,077	229,580	196,474	242,170	418,289	287,880	166,627	219,211	76,138	10,578	0	0	0	0	0
Mean Age	7.30	7.53	6.67	6.81	6.81	6.28	6.26	7.05	7.17	5.91	5.78	--	--	--	--	--

Table 5-6.6. CPUE (number/km) for chub caught in gill nets in management area 5-6. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0					
3	0.0	0.0	0.0	4.0	1.2	4.1	0.0	0.0	1.1	7.9	11.2					
4	0.0	1.9	16.4	8.0	6.3	16.2	22.1	4.7	3.2	44.2	22.3	N	N	N	N	N
5	7.6	18.6	45.3	50.7	51.2	125.6	97.1	28.4	26.0	72.6	55.8	O	O	O	O	O
6	95.3	59.6	94.4	89.4	111.6	178.2	156.7	75.8	59.6	83.7	71.7					
7	205.9	111.7	136.0	101.4	126.6	141.8	144.8	113.8	78.0	72.6	43.0					
8	171.6	111.7	74.3	81.4	85.7	85.1	35.8	64.8	69.3	26.8	15.9	D	D	D	D	D
9	49.6	67.0	10.1	28.0	23.0	4.1	8.5	34.8	26.0	7.9	3.2	A	A	A	A	A
10	0.0	16.8	1.3	4.0	8.1	0.0	5.1	7.9	14.1	1.6	0.0	T	T	T	T	T
11	0.0	3.7	2.5	2.7	1.2	0.0	0.0	1.6	1.1	0.0	0.0	A	A	A	A	A
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0					
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
Total	530.1	390.9	380.3	369.7	414.9	555.0	470.1	331.8	281.5	317.2	223.2	0.0	0.0	0.0	0.0	0.0

Table 5-7.5. The estimated number of chub caught in gill nets in management area 5-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1					0		276	0	144		0			0		
2					0		0	0	431		0			0		
3					0		551	481	287		28			0		
4	N	N	N	N	648	N	1,378	2,523	575	N	361	N	N	11	N	N
5	O	O	O	O	4,104	O	3,307	6,128	3,448	O	666	O	O	0	O	O
6					8,209		12,676	12,857	6,753		916			0		
7					7,777		15,983	15,260	10,920		611			0		
8	D	D	D	D	3,672	D	11,298	8,171	9,196	D	528	D	D	0	D	D
9	A	A	A	A	1,080	A	6,338	3,124	4,741	A	83	A	A	0	A	A
10	T	T	T	T	0	T	2,205	1,081	1,580	T	56	T	T	0	T	T
11	A	A	A	A	0	A	276	360	287	A	28	A	A	0	A	A
12					0		0	0	144		0			0		
13					0		276	0	0		0			0		
14					0		0	0	0		56			0		
15					0		0	0	0		0			0		
Total	0	0	0	0	25,490	0	54,563	49,985	38,506	0	3,332	0	0	11	0	0
Mean Age	--	--	--	--	6.51	--	7.11	6.69	7.15	--	6.38	--	--	4.00	--	--

Table 5-7.6. CPUE (number/km) for chub caught in gill nets in management area 5-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1					0.0		1.9	0.0	0.7		0.0					
2					0.0		0.0	0.0	2.0		0.0					
3					0.0		3.8	2.3	1.4		0.7					
4	N	N	N	N	10.3	N	9.5	11.9	2.7	N	8.6	N	N	N	N	N
5	O	O	O	O	65.1	O	22.9	28.9	16.3	O	15.8	O	O	O	O	O
6					130.1		87.7	60.6	31.8		21.7					
7					123.3		110.6	71.9	51.5		14.5					
8	D	D	D	D	58.2	D	78.2	38.5	43.3	D	12.5	D	D	D	D	D
9	A	A	A	A	17.1	A	43.9	14.7	22.4	A	2.0	A	A	A	A	A
10	T	T	T	T	0.0	T	15.3	5.1	7.5	T	1.3	T	T	T	T	T
11	A	A	A	A	0.0	A	1.9	1.7	1.4	A	0.7	A	A	A	A	A
12					0.0		0.0	0.0	0.7		0.0					
13					0.0		1.9	0.0	0.0		0.0					
14					0.0		0.0	0.0	0.0		1.3					
15					0.0		0.0	0.0	0.0		0.0					
Total	0.0	0.0	0.0	0.0	404.0	0.0	377.7	235.4	181.5	0.0	79.0	0.0	0.0	0.0	0.0	0.0

Table 5-8.5. The estimated number of chub caught in gill nets in management area 5-8. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	241	0	0	0	0	0	0	0	0	0	0		0			
2	0	0	0	0	0	0	0	0	0	0	0		0			
3	0	410	0	574	253	818	0	509	713	3,238	489		0			
4	963	1,639	1,305	1,148	253	3,271	0	1,018	2,138	7,914	2,036	N	761	N	N	N
5	4,091	4,916	15,657	10,328	16,924	18,197	6,007	9,669	11,403	20,146	6,027	O	2,046	O	O	O
6	18,290	15,978	23,746	35,000	45,215	30,261	26,173	31,044	22,332	20,146	10,670		2,760			
7	27,916	24,377	23,485	39,591	68,201	34,759	39,904	39,186	22,094	12,951	8,796		809			
8	25,750	17,002	18,266	18,361	40,415	21,264	34,755	36,133	17,580	6,116	4,968		428	D	D	D
9	5,535	5,531	5,741	6,885	11,367	11,246	9,869	17,812	7,602	2,518	570	A	0	A	A	A
10	0	1,434	1,827	4,016	3,284	5,316	1,287	4,580	2,376	1,079	163	T	0	T	T	T
11	0	0	261	1,148	758	818	429	1,527	238	0	0	A	0	A	A	A
12	0	0	0	0	0	409	429	0	0	0	0		0			
13	0	0	0	0	0	0	0	0	0	0	0		0			
14	0	0	0	0	0	0	0	0	0	0	0		0			
15	0	0	0	0	0	0	0	0	0	0	0		0			
Total	82,785	71,288	90,288	117,050	186,668	126,360	118,853	141,477	86,476	74,108	33,720	0	6,806	0	0	0
Mean Age	7.07	7.00	6.75	6.89	6.97	6.88	7.20	7.26	6.84	5.88	6.28	--	5.72	--	--	--

Table 5-8.6. CPUE (number/km) for chub caught in gill nets in management area 5-8. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0			
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0			
3	0.0	2.4	0.0	1.9	0.5	2.7	0.0	1.1	2.4	12.2	3.4		0.0			
4	6.3	9.4	7.6	3.8	0.5	11.0	0.0	2.3	7.2	29.9	14.1	N	21.5	N	N	N
5	26.9	28.3	91.0	34.5	35.8	61.0	23.1	21.7	38.4	76.2	41.7	O	57.9	O	O	O
6	120.1	91.9	138.0	117.0	95.6	101.5	100.8	69.6	75.2	76.2	73.8		78.1			
7	183.2	140.2	136.5	132.3	144.2	116.6	153.7	87.9	74.4	49.0	60.9		22.9			
8	169.0	97.8	106.2	61.4	85.4	71.3	133.8	81.1	59.2	23.1	34.4	D	12.1	D	D	D
9	36.3	31.8	33.4	23.0	24.0	37.7	38.0	40.0	25.6	9.5	3.9	A	0.0	A	A	A
10	0.0	8.2	10.6	13.4	6.9	17.8	5.0	10.3	8.0	4.1	1.1	T	0.0	T	T	T
11	0.0	0.0	1.5	3.8	1.6	2.7	1.7	3.4	0.8	0.0	0.0	A	0.0	A	A	A
12	0.0	0.0	0.0	0.0	0.0	1.4	1.7	0.0	0.0	0.0	0.0		0.0			
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0			
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0			
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0			
Total	543.4	409.9	524.7	391.2	394.6	423.9	457.7	317.4	291.4	280.1	233.3	0.0	192.5	0.0	0.0	0.0

Table 5-9.5. The estimated number of chub caught in gill nets in management area 5-9. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0			0	0	0	0						0			
2	0			0	0	0	0						0			
3	0			0	0	0	298						21			
4	347	N	N	1,615	248	1,702	1,488	N	N	N	N	N	21	N	N	N
5	0	O	O	5,653	3,221	15,315	3,423	O	O	O	O	O	48	O	O	O
6	4,864			11,307	9,415	17,016	10,864						21			
7	10,076			11,710	12,140	11,911	8,929						7			
8	6,602	D	D	6,461	7,557	3,403	4,613	D	D	D	D	D	7	D	D	D
9	2,085	A	A	3,634	1,239	851	446	A	A	A	A	A	0	A	A	A
10	0	T	T	404	248	0	149	T	T	T	T	T	0	T	T	T
11	0	A	A	0	0	0	0	A	A	A	A	A	0	A	A	A
12	0			0	0	0	0						0			
13	0			0	0	0	0						0			
14	0			0	0	0	0						0			
15	0			0	0	0	0						0			
Total	23,975	0	0	40,785	34,066	50,198	30,210	0	0	0	0	0	123	0	0	0
Mean Age	7.20	--	--	6.69	6.83	6.05	6.42	--	--	--	--	--	4.94	--	--	--

Table 5-9.6. CPUE (number/km) for chub caught in gill nets in management area 5-9. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0			0.0	0.0	0.0	0.0									
2	0.0			0.0	0.0	0.0	0.0									
3	0.0			0.0	0.0	0.0	2.4									
4	7.5	N	N	12.1	2.2	11.5	11.8	N	N	N	N	N	N	N	N	N
5	0.0	O	O	42.2	28.5	103.9	27.2	O	O	O	O	O	O	O	O	O
6	105.2			84.4	83.3	115.5	86.2									
7	217.9			87.4	107.5	80.8	70.9									
8	142.8	D	D	48.2	66.9	23.1	36.6	D	D	D	D	D	D	D	D	D
9	45.1	A	A	27.1	11.0	5.8	3.5	A	A	A	A	A	A	A	A	A
10	0.0	T	T	3.0	2.2	0.0	1.2	T	T	T	T	T	T	T	T	T
11	0.0	A	A	0.0	0.0	0.0	0.0	A	A	A	A	A	A	A	A	A
12	0.0			0.0	0.0	0.0	0.0									
13	0.0			0.0	0.0	0.0	0.0									
14	0.0			0.0	0.0	0.0	0.0									
15	0.0			0.0	0.0	0.0	0.0									
Total	518.4	0.0	0.0	304.3	301.5	340.6	239.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 4-5.13. The estimated number of yellow perch caught in gill nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	21,798	681	30,620	16,088	23,006	3,406	72,665	74,946	8,430	1,062	8,500	0	311	0	0	0
2	23,947	96,445	5,741	146,208	70,691	62,445	34,987	112,419	250,588	23,374	3,643	1,750	55,642	112,457	0	3,515
3	455,301	182,225	673,255	73,369	350,947	296,328	561,139	238,289	423,777	744,792	106,853	40,258	137,085	61,087	262,379	57,992
4	360,127	252,347	88,798	181,390	36,182	214,961	215,305	394,907	96,557	180,620	577,979	177,662	45,384	12,495	438,123	479,750
5	23,333	71,710	47,078	11,138	20,705	23,464	21,531	40,355	78,165	26,562	157,852	123,400	21,138	4,165	5,776	238,996
6	18,421	6,127	15,310	1,414	837	12,110	1,346	961	16,859	14,875	6,071	9,627	9,947	2,083	0	12,301
7	3,684	6,354	3,445	1,061	209	2,649	1,346	0	7,663	5,312	1,214	0	2,798	1,388	825	1,757
8	2,763	1,589	3,062	1,061	209	1,514	0	0	4,598	4,250	0	0	311	0	0	0
9	4,605	1,135	1,148	530	209	378	0	1,922	3,832	7,437	0	875	622	0	0	0
10	1,535	454	383	177	0	378	0	1,922	1,533	4,250	0	0	0	0	0	0
11	1,228	454	0	0	209	0	1,346	0	766	0	0	0	0	0	0	0
12	0	0	0	0	0	378	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	916,743	619,520	868,840	432,437	503,205	618,012	909,664	865,720	892,767	1,012,535	862,112	353,573	273,236	193,675	707,102	794,311
Mean Age	3.51	3.59	3.23	3.10	2.94	3.41	3.11	3.28	3.15	3.37	4.04	4.29	3.28	2.59	3.64	4.26

Table 4-5.14. CPUE (number/km) for yellow perch caught in gill nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	6.9	0.4	12.4	10.5	18.7	2.0	33.6	32.3	3.4	0.5	3.6	0.0	0.3	0.0	0.0	0.0
2	7.6	58.7	2.3	95.4	57.3	36.5	16.2	48.4	102.1	11.4	1.5	1.7	61.4	324.8	0.0	2.9
3	144.5	110.9	272.7	47.9	284.7	173.2	259.5	102.6	172.7	364.2	45.1	40.0	151.2	176.4	281.6	47.1
4	114.3	153.5	36.0	118.4	29.4	125.7	99.6	170.1	39.3	88.3	243.8	176.5	50.1	36.1	470.3	389.7
5	7.4	43.6	19.1	7.3	16.8	13.7	10.0	17.4	31.8	13.0	66.6	122.6	23.3	12.0	6.2	194.2
6	5.8	3.7	6.2	0.9	0.7	7.1	0.6	0.4	6.9	7.3	2.6	9.6	11.0	6.0	0.0	10.0
7	1.2	3.9	1.4	0.7	0.2	1.5	0.6	0.0	3.1	2.6	0.5	0.0	3.1	4.0	0.9	1.4
8	0.9	1.0	1.2	0.7	0.2	0.9	0.0	0.0	1.9	2.1	0.0	0.0	0.3	0.0	0.0	0.0
9	1.5	0.7	0.5	0.3	0.2	0.2	0.0	0.8	1.6	3.6	0.0	0.9	0.7	0.0	0.0	0.0
10	0.5	0.3	0.2	0.1	0.0	0.2	0.0	0.8	0.6	2.1	0.0	0.0	0.0	0.0	0.0	0.0
11	0.4	0.3	0.0	0.0	0.2	0.0	0.6	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	290.9	376.9	351.9	282.2	408.2	361.3	420.7	372.9	363.7	495.1	363.6	351.4	301.4	559.4	759.0	645.3

Table 4-5.29. The estimated number of yellow perch caught in trap nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	2,376	3,931	121	1,748	489	1,093	797	0	8,009	536	1,127	37	1,600	2,269	0	
3	5,445	5,312	8,061	1,567	9,018	7,167	62,538	2,632	19,222	31,633	8,111	1,789	6,044	252	1,127	
4	4,455	3,134	970	3,737	1,328	7,774	26,290	13,398	9,210	9,651	24,109	2,336	3,200	0	483	N
5	1,188	531	485	1,145	2,027	850	2,390	5,264	6,407	2,145	6,985	2,920	1,422	0	0	O
6	2,673	584	182	422	559	1,579	1,593	239	5,206	3,753	676	438	2,133	0	0	
7	1,485	797	424	241	489	486	797	239	2,002	1,072	0	37	1,955	0	0	
8	495	372	424	422	699	243	398	479	1,201	536	0	0	178	0	0	D
9	1,386	53	121	422	489	121	0	0	400	0	0	0	0	0	0	A
10	990	212	121	121	210	607	0	239	0	0	0	0	0	0	0	T
11	495	53	0	121	0	243	0	479	0	0	0	0	0	0	0	A
12	99	0	61	0	0	243	0	0	0	0	0	0	0	0	0	
13	0	0	0	0	0	121	0	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	21,089	14,979	10,970	9,945	15,310	20,528	94,802	22,968	51,658	49,326	41,008	7,556	16,533	2,521	1,610	0
Mean Age	4.94	3.62	3.76	4.30	4.07	4.30	3.42	4.46	3.89	3.64	3.95	4.27	4.18	2.10	3.30	--

Table 4-5.30. CPUE (number/net lift) for yellow perch caught in trap nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
2	6.7	15.6	0.5	8.8	1.7	4.2	1.9	0.0	38.1	2.5	3.7	0.2	10.0	27.9		
3	15.3	21.1	33.5	7.9	30.5	27.2	153.0	11.7	91.5	147.8	26.8	9.8	37.9	3.1		
4	12.5	12.4	4.0	18.8	4.5	29.5	64.3	59.8	43.9	45.1	79.5	12.8	20.1	0.0	N	N
5	3.3	2.1	2.0	5.7	6.8	3.2	5.8	23.5	30.5	10.0	23.0	16.0	8.9	0.0	O	O
6	7.5	2.3	0.8	2.1	1.9	6.0	3.9	1.1	24.8	17.5	2.2	2.4	13.4	0.0		
7	4.2	3.2	1.8	1.2	1.7	1.8	1.9	1.1	9.5	5.0	0.0	0.2	12.3	0.0		
8	1.4	1.5	1.8	2.1	2.4	0.9	1.0	2.1	5.7	2.5	0.0	0.0	1.1	0.0	D	D
9	3.9	0.2	0.5	2.1	1.7	0.5	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	A	A
10	2.8	0.8	0.5	0.6	0.7	2.3	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	T	T
11	1.4	0.2	0.0	0.6	0.0	0.9	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	A	A
12	0.3	0.0	0.3	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
13	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total	59.2	59.4	45.5	49.9	51.7	78.0	232.0	102.4	245.9	230.5	135.3	41.3	103.7	31.1	0.0	0.0

Table 6-1.13. The estimated number of yellow perch caught in gill nets in management area 6-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0	0	0	0	0	0	0	0	0	0	0	20	0	0	0	0
2	0	110	3,819	639	2,778	0	1,158	2,239	8,403	561	79	400	0	124	43	130
3	19,687	4,065	21,960	8,090	17,698	5,604	17,894	7,578	21,487	36,786	6,790	2,120	215	629	689	390
4	66,887	38,237	18,523	35,022	6,666	19,053	13,894	22,045	9,786	6,505	10,959	5,161	2,148	1,087	1,314	2,112
5	98,670	23,404	22,342	16,712	9,047	4,483	6,737	15,500	7,233	1,682	2,805	2,120	8,894	1,420	733	3,574
6	23,244	29,227	19,096	12,348	2,778	3,213	1,474	3,100	4,361	2,579	236	240	4,640	1,141	539	1,007
7	5,455	4,615	6,683	5,216	2,619	1,494	526	689	2,234	1,122	0	20	1,031	116	151	227
8	1,423	879	1,910	1,597	873	971	105	0	213	785	0	0	129	8	43	260
9	949	330	191	0	0	374	211	0	213	449	0	0	0	0	0	0
10	0	0	191	0	79	0	0	172	0	112	0	0	0	0	22	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	216,316	100,866	94,714	79,624	42,538	35,193	41,999	51,323	53,931	50,580	20,869	10,081	17,057	4,525	3,533	7,701
Mean Age	4.70	4.96	4.64	4.68	4.07	4.44	3.82	4.25	3.75	3.57	3.82	3.97	5.26	4.71	4.51	4.86

Table 6-1.14. CPUE (number/km) for yellow perch caught in gill nets in management area 6-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
2	0.0	0.2	5.7	1.2	7.7	0.0	4.1	8.8	42.5	2.5	0.5	3.8	0.0	3.1	2.3	1.6
3	18.1	7.2	32.5	14.9	49.1	24.4	63.4	29.8	108.7	161.1	40.4	20.2	1.7	15.6	37.0	4.8
4	61.6	68.2	27.4	64.7	18.5	83.0	49.2	86.6	49.5	28.5	65.2	49.1	16.8	27.0	70.4	26.2
5	90.8	41.7	33.1	30.9	25.1	19.5	23.9	60.9	36.6	7.4	16.7	20.2	69.5	35.3	39.3	44.4
6	21.4	52.1	28.3	22.8	7.7	14.0	5.2	12.2	22.1	11.3	1.4	2.3	36.3	28.3	28.9	12.5
7	5.0	8.2	9.9	9.6	7.3	6.5	1.9	2.7	11.3	4.9	0.0	0.2	8.1	2.9	8.1	2.8
8	1.3	1.6	2.8	2.9	2.4	4.2	0.4	0.0	1.1	3.4	0.0	0.0	1.0	0.2	2.3	3.2
9	0.9	0.6	0.3	0.0	0.0	1.6	0.7	0.0	1.1	2.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.7	0.0	0.5	0.0	0.0	0.0	0.0	1.2	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	199.2	179.9	140.3	147.0	118.0	153.3	148.8	201.7	272.9	221.5	124.2	95.9	133.4	112.4	189.4	95.6

Table 4-5.17. The estimated number of walleye caught in gill nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	969	417	696	828	76	183	512	732	0	0	334	0	92	0	0	0
2	2,907	5,001	522	2,416	9,016	61	8,527	8,785	1,177	9,005	2,674	96	46	703	0	0
3	310	5,974	2,785	276	917	5,784	1,194	3,844	2,616	375	2,785	0	229	268	1,257	1,343
4	194	1,528	5,136	2,830	611	1,339	3,581	2,013	1,962	3,002	223	4,127	642	1,206	898	9,623
5	155	1,389	1,132	3,313	1,757	487	1,705	732	131	1,876	1,337	1,632	1,421	1,608	2,515	1,566
6	1,473	1,667	1,393	1,312	1,757	365	0	1,098	523	750	2,897	1,824	1,513	1,641	719	1,343
7	659	5,557	2,002	1,173	764	244	341	0	131	1,126	446	864	1,148	1,005	1,078	448
8	620	4,029	4,091	1,588	1,375	365	171	183	131	0	891	576	917	502	180	224
9	194	1,945	2,263	2,899	1,146	487	0	183	131	375	334	192	642	268	359	224
10	349	1,528	2,263	2,761	1,528	365	341	366	0	375	111	0	229	0	0	0
11	116	556	1,306	1,933	611	122	171	366	0	375	0	192	138	0	180	0
12	78	139	174	690	76	122	0	0	0	0	0	288	183	0	0	0
13	0	0	0	276	0	61	0	183	0	0	0	96	46	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	138	0	0	0	0	0	375	0	0	0	0	0	0
Total	8,023	29,729	23,763	22,434	19,637	9,984	16,542	18,486	6,800	17,635	12,033	9,886	7,245	7,200	7,185	14,770
Mean Age	4.38	5.49	6.35	6.78	4.70	4.40	3.21	3.32	3.67	3.96	4.44	5.56	6.54	5.33	5.35	4.42

Table 4-5.18. CPUE (number/km) for walleye caught in gill nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	6.6	0.9	1.7	1.1	0.3	1.9	4.3	4.7	0.0	0.0	1.8	0.0	0.4	0.0	0.0	0.0
2	19.7	10.4	1.3	3.4	33.6	0.6	71.9	56.5	17.1	67.3	14.4	0.4	0.2	4.5	0.0	0.0
3	2.1	12.4	6.8	0.4	3.4	58.9	10.1	24.7	38.1	2.8	15.0	0.0	0.9	1.7	7.2	7.6
4	1.3	3.2	12.6	3.9	2.3	13.6	30.2	12.9	28.6	22.4	1.2	19.0	2.5	7.6	5.2	54.2
5	1.0	2.9	2.8	4.6	6.6	5.0	14.4	4.7	1.9	14.0	7.2	7.5	5.6	10.2	14.5	8.8
6	10.0	3.5	3.4	1.8	6.6	3.7	0.0	7.1	7.6	5.6	15.6	8.4	6.0	10.4	4.1	7.6
7	4.5	11.6	4.9	1.6	2.9	2.5	2.9	0.0	1.9	8.4	2.4	4.0	4.5	6.4	6.2	2.5
8	4.2	8.4	10.0	2.2	5.1	3.7	1.4	1.2	1.9	0.0	4.8	2.6	3.6	3.2	1.0	1.3
9	1.3	4.0	5.6	4.0	4.3	5.0	0.0	1.2	1.9	2.8	1.8	0.9	2.5	1.7	2.1	1.3
10	2.4	3.2	5.6	3.8	5.7	3.7	2.9	2.4	0.0	2.8	0.6	0.0	0.9	0.0	0.0	0.0
11	0.8	1.2	3.2	2.7	2.3	1.2	1.4	2.4	0.0	2.8	0.0	0.9	0.5	0.0	1.0	0.0
12	0.5	0.3	0.4	1.0	0.3	1.2	0.0	0.0	0.0	0.0	0.0	1.3	0.7	0.0	0.0	0.0
13	0.0	0.0	0.0	0.4	0.0	0.6	0.0	1.2	0.0	0.0	0.0	0.4	0.2	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Total	54.2	61.9	58.3	31.1	73.3	101.7	139.4	118.8	99.0	131.8	64.7	45.4	28.6	45.7	41.4	83.2

Table 4-5.33. The estimated number of walleye caught in trap nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	6,160	3,055	5,782	2,706	76	7,302	1,139	4,461	2,036	0	2,137	0	6,677	0	0	1,540
2	95,099	20,366	7,034	24,260	35,329	3,007	62,354	25,957	17,401	39,734	14,009	47,546	2,170	66,865	3,188	10,469
3	9,834	27,494	33,245	2,657	24,517	63,714	11,104	33,866	39,616	20,404	48,438	10,401	53,085	13,866	73,953	11,701
4	5,079	2,898	16,285	6,594	2,056	8,734	41,569	4,056	24,251	18,256	1,662	16,344	7,011	17,256	5,738	45,881
5	2,161	2,507	2,313	4,330	1,447	716	6,264	9,126	4,813	15,035	4,036	2,476	5,676	2,465	8,925	2,155
6	7,024	3,055	2,409	1,230	838	1,289	1,139	2,028	2,407	1,611	2,612	1,981	2,003	4,930	4,888	1,540
7	4,107	4,465	3,469	1,132	609	1,718	1,424	811	1,666	3,222	712	2,972	1,836	2,773	3,400	2,463
8	3,674	4,308	6,456	2,018	381	1,289	1,708	1,217	185	1,611	950	330	1,669	1,849	1,275	924
9	2,161	3,212	4,336	2,264	609	1,289	1,139	2,028	740	0	950	1,156	334	924	425	308
10	2,161	2,037	3,084	2,165	1,523	2,291	854	203	926	1,611	237	330	1,169	0	425	0
11	1,189	1,253	1,349	1,870	609	2,720	285	811	2,036	0	475	330	501	0	0	0
12	648	548	867	689	533	859	569	1,420	555	1,611	0	165	0	0	0	0
13	216	157	0	541	152	573	0	1,014	185	1,611	712	0	0	0	0	0
14	0	0	0	49	152	430	0	0	370	0	237	330	0	0	0	0
15	0	78	0	148	0	0	0	0	0	0	0	0	0	0	0	0
Total	139,514	75,433	86,629	52,653	68,830	95,929	129,548	86,997	97,188	104,705	77,168	84,361	82,131	110,929	102,217	76,981
Mean Age	3.02	4.07	4.41	4.17	3.05	3.77	3.21	3.53	3.67	3.73	3.36	3.12	3.47	2.96	3.59	3.75

Table 4-5.34. CPUE (number/net lift) for walleye caught in trap nets in management area 4-5. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	3.2	1.7	4.0	1.7	0.1	3.7	0.7	3.2	1.5	0.0	1.4	0.0	3.9	0.0	0.0	1.8
2	49.0	11.0	4.8	15.0	25.1	1.5	36.1	18.9	12.5	25.1	9.0	29.2	1.3	78.6	4.9	12.0
3	5.1	14.9	22.8	1.6	17.4	32.6	6.4	24.6	28.5	12.9	31.3	6.4	31.3	16.3	113.0	13.5
4	2.6	1.6	11.2	4.1	1.5	4.5	24.1	2.9	17.5	11.5	1.1	10.0	4.1	20.3	8.8	52.8
5	1.1	1.4	1.6	2.7	1.0	0.4	3.6	6.6	3.5	9.5	2.6	1.5	3.3	2.9	13.6	2.5
6	3.6	1.7	1.7	0.8	0.6	0.7	0.7	1.5	1.7	1.0	1.7	1.2	1.2	5.8	7.5	1.8
7	2.1	2.4	2.4	0.7	0.4	0.9	0.8	0.6	1.2	2.0	0.5	1.8	1.1	3.3	5.2	2.8
8	1.9	2.3	4.4	1.2	0.3	0.7	1.0	0.9	0.1	1.0	0.6	0.2	1.0	2.2	1.9	1.1
9	1.1	1.7	3.0	1.4	0.4	0.7	0.7	1.5	0.5	0.0	0.6	0.7	0.2	1.1	0.6	0.4
10	1.1	1.1	2.1	1.3	1.1	1.2	0.5	0.1	0.7	1.0	0.2	0.2	0.7	0.0	0.6	0.0
11	0.6	0.7	0.9	1.2	0.4	1.4	0.2	0.6	1.5	0.0	0.3	0.2	0.3	0.0	0.0	0.0
12	0.3	0.3	0.6	0.4	0.4	0.4	0.3	1.0	0.4	1.0	0.0	0.1	0.0	0.0	0.0	0.0
13	0.1	0.1	0.0	0.3	0.1	0.3	0.0	0.7	0.1	1.0	0.5	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.3	0.0	0.2	0.2	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	71.9	40.8	59.5	32.5	48.8	49.0	75.1	63.2	70.0	66.1	49.8	51.8	48.4	130.4	156.2	88.6

Table 5-2.13. The estimated number of walleye caught in gill nets in management area 5-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1					0			0	0	0	0		0			
2					0			58	0	0	0		0			
3					288			233	77	14	0		238			
4	N	N	N	N	511	N	N	291	460	77	0	N	79	N	N	N
5	O	O	O	O	920	O	O	407	192	322	70	O	79	O	O	O
6					130			174	230	126	261		199			
7					65			58	307	119	52		20			
8	D	D	D	D	19	D	D	58	192	91	105	D	20	D	D	D
9	A	A	A	A	9	A	A	0	230	35	70	A	0	A	A	A
10	T	T	T	T	28	T	T	0	38	21	17	T	0	T	T	T
11	A	A	A	A	0	A	A	0	77	7	0	A	0	A	A	A
12					9			0	38	0	0		0			
13					9			0	0	0	0		0			
14					0			0	0	0	0		0			
15					9			0	0	0	0		0			
Total	0	0	0	0	1,998	0	0	1,280	1,840	811	575	0	636	0	0	0
Mean Age	--	--	--	--	4.82	--	--	4.64	6.44	6.01	6.82	--	4.59	--	--	--

Table 5-2.14. CPUE (number/km) for walleye caught in gill nets in management area 5-2. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1					0.0			0.0	0.0	0.0	0.0		0.0			
2					0.0			1.2	0.0	0.0	0.0		0.0			
3					3.4			4.7	1.2	0.3	0.0		4.3			
4	N	N	N	N	6.1	N	N	5.8	7.2	1.6	0.0	N	1.4	N	N	N
5	O	O	O	O	10.9	O	O	8.2	3.0	6.8	1.7	O	1.4	O	O	O
6					1.5			3.5	3.6	2.7	6.5		3.6			
7					0.8			1.2	4.8	2.5	1.3		0.4			
8	D	D	D	D	0.2	D	D	1.2	3.0	1.9	2.6	D	0.4	D	D	D
9	A	A	A	A	0.1	A	A	0.0	3.6	0.7	1.7	A	0.0	A	A	A
10	T	T	T	T	0.3	T	T	0.0	0.6	0.4	0.4	T	0.0	T	T	T
11	A	A	A	A	0.0	A	A	0.0	1.2	0.1	0.0	A	0.0	A	A	A
12					0.1			0.0	0.6	0.0	0.0		0.0			
13					0.1			0.0	0.0	0.0	0.0		0.0			
14					0.0			0.0	0.0	0.0	0.0		0.0			
15					0.1			0.0	0.0	0.0	0.0		0.0			
Total	0.0	0.0	0.0	0.0	23.7	0.0	0.0	25.7	28.8	17.2	14.2	0.0	11.4	0.0	0.0	0.0

Table 5-7.13. The estimated number of walleye caught in gill nets in management area 5-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1							0			0	28	5	0	0	0	
2							0			56	0	5	0	19	0	
3							0			105	364	5	44	0	0	
4	N	N	N	N	N	N	163	N	N	43	65	280	133	19	0	N
5	O	O	O	O	O	O	113	O	O	248	37	59	221	56	0	O
6							50			93	103	43	59	149	0	
7							63			25	28	43	29	56	166	
8	D	D	D	D	D	D	0	D	D	19	19	22	29	37	166	D
9	A	A	A	A	A	A	25	A	A	12	0	22	15	75	0	A
10	T	T	T	T	T	T	13	T	T	0	9	5	0	0	0	T
11	A	A	A	A	A	A	13	A	A	6	9	0	0	0	0	A
12							13			0	0	0	0	0	0	
13							0			0	0	0	0	0	0	
14							0			0	0	0	0	0	0	
15							0			0	0	0	0	0	0	
Total	0	0	0	0	0	0	452	0	0	608	663	490	530	410	332	0
Mean Age	--	--	--	--	--	--	5.75	--	--	4.78	4.11	4.96	5.08	6.45	7.50	--

Table 5-7.14. CPUE (number/km) for walleye caught in gill nets in management area 5-7. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1							0.0			0.0	0.3	0.1	0.0	0.0	0.0	
2							0.0			0.9	0.0	0.1	0.0	0.2	0.0	
3							0.0			1.7	3.4	0.1	0.3	0.0	0.0	
4	N	N	N	N	N	N	4.2	N	N	0.7	0.6	4.0	0.8	0.2	0.0	N
5	O	O	O	O	O	O	2.9	O	O	4.0	0.4	0.9	1.3	0.5	0.0	O
6							1.3			1.5	1.0	0.6	0.3	1.4	0.0	
7							1.6			0.4	0.3	0.6	0.2	0.5	2.8	
8	D	D	D	D	D	D	0.0	D	D	0.3	0.2	0.3	0.2	0.4	2.8	D
9	A	A	A	A	A	A	0.6	A	A	0.2	0.0	0.3	0.1	0.7	0.0	A
10	T	T	T	T	T	T	0.3	T	T	0.0	0.1	0.1	0.0	0.0	0.0	T
11	A	A	A	A	A	A	0.3	A	A	0.1	0.1	0.0	0.0	0.0	0.0	A
12							0.3			0.0	0.0	0.0	0.0	0.0	0.0	
13							0.0			0.0	0.0	0.0	0.0	0.0	0.0	
14							0.0			0.0	0.0	0.0	0.0	0.0	0.0	
15							0.0			0.0	0.0	0.0	0.0	0.0	0.0	
Total	0.0	0.0	0.0	0.0	0.0	0.0	11.5	0.0	0.0	9.7	6.3	7.1	3.1	3.9	5.6	0.0

Table 6-1.9. The estimated number of walleye caught in gill nets in management area 6-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	659	114	516	1,703	758	137	239	1,509	0	0	1,804	0	66	0	0	0
2	2,417	2,982	516	334	654	208	239	2,304	2,584	2,567	3,721	643	3,900	2,108	206	624
3	4,028	85	295	67	26	38	40	318	6,459	0	1,015	1,636	1,147	3,445	3,531	1,847
4	3,442	1,250	331	234	209	33	159	0	1,292	2,567	226	964	164	231	1,474	10,691
5	1,172	2,642	1,620	534	1,595	93	120	636	0	0	672	426	103	686	572	
6	586	824	2,320	668	1,072	247	339	159	0	0	226	614	131	0	308	26
7	146	170	295	1,569	445	296	1,036	159	646	0	0	467	131	0	0	0
8	0	312	221	467	602	400	817	79	0	0	113	205	66	0	34	0
9	0	199	110	300	52	531	438	318	646	0	113	117	0	0	0	0
10	73	57	37	267	26	186	359	159	0	0	0	117	0	0	0	0
11	293	28	0	334	26	153	100	159	0	0	0	29	0	0	0	0
12	0	28	37	234	26	170	100	0	0	0	0	29	0	0	0	0
13	73	28	0	200	0	93	80	0	0	0	0	0	0	0	0	0
14	0	28	0	33	0	77	40	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	49	0	0	0	0	0	0	0	0	0	0
Total	12,891	8,748	6,297	6,945	5,492	2,712	4,104	5,799	11,626	5,134	7,217	5,493	6,030	5,887	6,238	13,760
Mean Age	3.62	4.22	4.99	5.74	4.85	7.89	7.14	3.30	3.44	3.00	2.28	4.53	2.71	2.72	3.60	3.82

Table 6-1.10. CPUE (number/km) for walleye caught in gill nets in management area 6-1. Catch includes fish that were harvested, released, or discarded.

Age	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
1	1.9	0.3	1.9	6.7	3.5	1.0	1.4	12.8	0.0	0.0	12.2	0.0	0.4	0.0	0.0	0.0
2	6.9	7.1	1.9	1.3	3.0	1.5	1.4	19.5	11.9	24.1	25.3	3.3	24.2	32.4	4.0	7.2
3	11.5	0.2	1.1	0.3	0.1	0.3	0.2	2.7	29.8	0.0	6.9	8.5	7.1	52.9	69.0	21.4
4	9.9	3.0	1.2	0.9	1.0	0.2	0.9	0.0	6.0	24.1	1.5	5.0	1.0	3.6	28.8	124.0
5	3.4	6.3	6.0	2.1	7.3	0.7	0.7	5.4	0.0	0.0	0.0	3.5	2.6	1.6	13.4	6.6
6	1.7	1.9	8.6	2.6	4.9	1.8	2.0	1.3	0.0	0.0	1.5	3.2	0.8	0.0	6.0	0.3
7	0.4	0.4	1.1	6.1	2.0	2.2	6.1	1.3	3.0	0.0	0.0	2.4	0.8	0.0	0.0	0.0
8	0.0	0.7	0.8	1.8	2.7	3.0	4.8	0.7	0.0	0.0	0.8	1.1	0.4	0.0	0.7	0.0
9	0.0	0.5	0.4	1.2	0.2	3.9	2.6	2.7	3.0	0.0	0.8	0.6	0.0	0.0	0.0	0.0
10	0.2	0.1	0.1	1.0	0.1	1.4	2.1	1.3	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0
11	0.8	0.1	0.0	1.3	0.1	1.1	0.6	1.3	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
12	0.0	0.1	0.1	0.9	0.1	1.3	0.6	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
13	0.2	0.1	0.0	0.8	0.0	0.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.1	0.0	0.1	0.0	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	36.9	20.7	23.3	27.2	25.1	20.1	24.2	49.1	53.6	48.3	49.0	28.6	37.5	90.4	121.9	159.7

